Acorn User

THE ALTERNATIVE FOR POWER COMPUTING

WWW.ACORNUSER.COM



BE THE SHOPKEEPER
E-Commerce from the trade side

ECDL IN DETAIL
More detail on the qualification

IYONIX CAPABLE
Speed and the new BBC BASIC

GUILDFORD SHOW
Make sure you get there

Plus even more great articles . . .

tau PRESS

ISSUE 264 OCTOBER 2003 £4.20

Liquid Silicon

· Computers & Music Hardware · Upgrades · Software · Cables etc ·



Iyonix Computers

All Iyonix systems come with a free USB hub until further notice.

Iyonix (128Mb, 40Gb, CD)	£1269.00
Iyonix (128Mb, 80Gb, CDRW)	£1319.00
Iyonix (512Mb, 100Gb, CDRW)	£1419.00
Aemulor	£58.75
Podule backplane	£49.00
USB to Parallel converter	£25.00
Upgrades/Expansion cards/Extras	£Ask

NEW LOW PRICES

Microdigital Computers

Alpha M1 Portable, 14.1"	£925.00
Alpha M2 Portable, 15.1"	£1070.00
Alpha M3 Portable, 15.1", 1400x1050	£1170.00
Alpha M4 Portable, 15.1"	£1295.00
Alpha M5 Portable, 17" widescreen, 1440x900	£1415.00
Omega standard tower case	£1355.00
Omega midi tower case	£1399.00
Omega desktop case	£1402.00
Upgrades/Expansion cards/Extras	£Ask

Alpha and Omega systems are now shipping.

Please ask for latest delivery information for new orders.

RiscStation Computers

R7500 Lite+	£656.75
R7500 NetWorx	£480.50
R7500 NetWorx HD	£539.30
R7500 Scorcher	£797.50
R7500 Scorcher Twindeck	£833.00



Monitors

iiyama 1352 (15" FST)	£98.40
iiyama Vision Master 1403* (17" FST)	£113.40
iiyama Vision Master Pro 1413 (17" NF)	£144.65
iiyama Vision Master Pro 413* (17" HBNF)	£166.40
iiyama Vision Master 1451 (19" FST)	£144.65
iiyama Vision Master Pro 454 (19" NF)	£316.00
iiyama Vision Master Pro 455* (19" HBNF)	£207.20
iiyama Vision Master 506 (21" FST)	£445.20
iiyama Vision Master Pro 513 (22" NF)	£445.20
iiyama Vision Master Pro 514 (22" NF)	£566.25
iiyama Pro-Lite E380S (15" LCD)	£270.75
iiyama 3819* (15" LCD)	£316.00
iiyama 3835* (15" LCD)	£384.00
iiyama Pro-Lite E430 (Iv/Bk/Silver) (17" LCD)	£362.25
iiyama Pro-Lite E431 (Ivory/Black) (17" LCD)	£370.40
iiyama 4315* (17" LCD)	£486.00
iiyama 4332* (17" LCD)	£486.00
iiyama 4611 (18" LCD)	£452.00
iiyama 4612* (18.1" LCD)	£520.00
iiyama 4636 (18.1" LCD)	£785.20
iiyama 4637 Black (18.1" LCD)	£560.80
iiyama 4821* (19" LCD)	£724.00
iiyama 4831 (19" LCD)	£783.85
iiyama 5131* (20.1" LCD)	£1179.55
iiyama 5311 Black (20.8" LCD)	£3149.00
iiyama 5611 Black (22.2" LCD)	£5499.00

NEW LOW PRICES

* Also available in black.

Monitors are also available from AOC, CTX, IBM, Phillips, Samsung and Sony.

ViewFinder card (32Mb)	£240.00

Touchscreen monitors coming soon.

Call us for your nearest UK dealer for the POSum point of sale systems and the EBMS business management solutions.

Second hand A7000s and Risc PCs from only £70.00 inc. VAT & delivery!

Also network cards, backplanes, CD drives etc.

Please check our web site or phone for details.



Memory Upgrades

Please call to check current prices.
Risc PC/A7000/RiscStation/Mico SIMMs:

16Mb FPM	£28.20
32Mb EDO (HC, works in Risc PCs)	£26.75
64Mb EDO (works in Risc PCs)	£39.00
128Mb EDO	£77.55
2Mb VRAM (upgraded 1Mb cards)	£49.95

Music & Sound Section

Please call for other musical items
MIDI interfaces:

MIDI Max II internal 1x1x1	£93.95
Parallel Port 1x1x1 (back in stock)	£92.95
RiscStation MIDI drivers & cable	£17.95
RiscStation XG card & cable	£116.95
RiscStation XG card, cable & keyboard	£245.95
Sibelius 6	£97.95
Sibelius 7 Student	£245.95
Sibelius 7	£394.95
Sibelius 2 for PC/Mac	£535.50

Other Hardware

10/100BaseT ethernet card (RCI/Simtec)	£89.00
Mouse (Genius/STD Acorn-compatible)	£19.95
Mouse (PS/2 Logitech)	£14.99
PS2MouseMini adaptor for older machines	£18.95
Printers	£Call
Risc PC second slice (no PSU)	£95.00
RISC OS 4 (fitting & Select available)	£85.00
RiscStation second serial port	£10.95
Scanners	£Call
StrongARM & RISC OS 4	£299.00

Other Software

Abuse	£20.00
ArtWorks 2	£165.00
C/C++ (26/32-bit version)	£195.00
CD Burn	£55.95
Chaos Engine	£19.50
DataPower 2	£120.95
Doom+ CDs	£30.00
Descent CDs	£25.00
Desktop Repton CD	£19.90
DialUp 2 & Messenger Pro	£56.90
EasiWriter Pro+ CD	£76.95
FastSpool+	£17.50
Grapevine	£24.95
Heroes of Might & Magic 2	£32.00
Krisalis Collection Gold CD	£25.95
LanMan98	£39.25
OHP 2 CD	£37.95
Oregano 2 CD	£97.95
Other Worlds CD	£17.95
Ovation Pro CD	£138.95
Personal Accounts	£44.00
Photodesk Olympic CD	£127.95
Prophet 3+ Pro	£179.00
Quake	£22.00
R-Comp Internet Suite	£73.95
Schema 2	£58.95
SiteWriter	£58.95
Sleuth 3	£48.95
Sound.Plugin for browsers	£11.50
SVG Plugin for browsers	£11.50
Syndicate+	£26.50
TBA Games CD	£20.00
TechWriter Pro+ CD	£99.95
TEK	£29.95
WebFX3D	£24.50

Books & Manuals

RISC OS Manuals CD	£29.95

Acorn Centres of Technology

Authorised Installer RISC OS 4

Registered Developer RISC OS 4

TDK®

Discs (e.g. 20x black discs – £6.28)
Batteries (e.g. 4x AA Xtra alkaline – £2.14)
Also Audio & Video Tapes, Mini Discs, CDRs, DAT tapes etc.

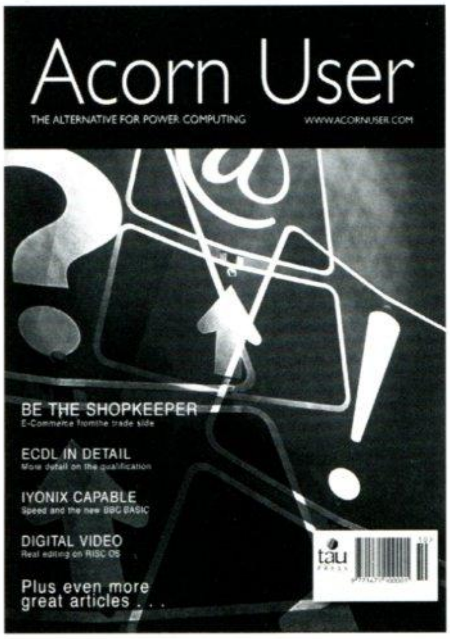
*We will attempt to match or beat **any** advertised price – even special offers. Our **free** catalogue contains over 2000 items. Please ask for a copy or visit our web site.*

FREEPOST EH2725
Kirkcaldy, Fife, KY2 5BR
United Kingdom
Tel: 01592 592265 Fax: 01592 596102
email: sales@liquid-silicon.com
http://www.liquid-silicon.com

All prices INCLUDE VAT & UK carriage

Official orders, foreign orders and callers welcome.

October 2003 Issue 264



Next issue on sale: 30th Oct 03

Published by

tau PRESS

28a Middle Hillgate
Stockport SK1 3AY UK
enquiries@acornuser.com
www.acornuser.com
Tel: (+44/0) 161 429 8902
Fax: (+44/0) 161 429 0685
Printed by The Manson Group, St Albans

Editor Rob Donaldson
Designed by Mark Atkinson & John Caldwell
Finance Manager Michelle O'Neill
Distribution COMAG (01895 444055)
Advertising Steve Turnbull
Managing Director Sharon Henderson

Subscriptions:
(+44/0) 161 429 8902
E-mail: subscrip@acornuser.com
Annual (13 issue) subscription rates:
£46.99 (UK) £51.99 (EU) £63.99 (World)

Editor's Comments

I talked a little bit last time about possible futures for RISC OS and the associated machines. It's strange perhaps to refer to it that way but realistically what we all consider to be RISC OS isn't really RISC OS at all, it's an easy to use Graphical User Interface and a set of code modules with a nice easy application interface.

The fact is that you can have RISC OS running on a completely non-ARM machine and it's still RISC OS as far as you're concerned. You can't embarrassed about it being an Intel machine because we've been running on Intel-manufactured chips for years. You could get precious about it running on a Pentium of some variety or another but that really isn't the thing.

The thing we object to is the total dominance of Windows and the brainwashing of the populace into thinking that Windows is the only fruit. When in fact there are at least three other options for desktop machines.

But I digress. In this issue we are looking at the enhancements to BBC BASIC that have been made for the Iyonix. Arguably only some of them are necessary, I imagine some behind the scenes work has been necessary (beyond just making it 32-bit compatible). Some of the enhancements are handy from the programmer viewpoint. But what programmer is going to use the new features? None, unless the program being written will only work on the Iyonix.

What should happen is that the language should be made available to anyone for download whether that's done through Castle or RISCOS Ltd is largely irrelevant, that it should be done is important.

BBC BASIC makes a wonderful fast prototyping tool for RISC OS-based software. Actually it makes a very good application language full stop. If Castle want to sell RISC OS-based systems to third parties then having an easy to use application language is very important.

And that language should be BBC BASIC, it could do with more work and some rather more dramatic enhancements but it could be the bees-knees. Letting it stagnate, and not even making it generally available does not make sound commercial sense.

Rob Donaldson

RISC OS South East Show

RISC OS South-East 2003 is to be held at Guildford College on October 18th. Given the tremendous success of last year's show, the organisers were keen to hold a sequel. As last year, the show is being organised by the Surrey and Sussex Acorn User Group in conjunction with Fillin Ltd.

Last year all stands in the hall were taken and the response from exhibitors this year has been even better. Many have asked for additional stand space, plus there will be are even more exhibitors than last year. As a consequence the exhibition area will be expanded to take in the space used by the theatre last year. This has the dual benefits of allowing more exhibitors plus more space for visitors to move around in (it was a little crowded last year).

Current exhibitors include:

- Acorn Publisher
- Acorn User
- Archive
- Aemulor
- APDL
- The ARM Club
- Brian Jaques
- Castle Technology
- Charity Stand
- CJE Micro's
- Electronic Font Foundry
- Fortran Friends
- Icon Technology
- IC Software
- ITC
- MW Software
- Paul Vigay
- Peter Naulls
- Photodesk
- RComp
- RISC OS Ltd
- Serious Statistical Software
- Virtual Acorn

It is expected that several other names will be added before the show commences.

The theatre will be in a separate room but within easy reach of the hall. The theatre presentations are as follows:

Jack Lillingston of Castle will again be a key speaker and will talk about the future of RISC OS, giving his story about the purchase of the operating system from Pace. News of Iyonix development will be the subject of a second presentation. RISC OS Ltd will give the latest news of the Select scheme, while R-Comp will also be announcing new products. We expect other talks from Brian Jaques and Acorn Publisher.

Visit the show Web site **www.fillin.co.uk/seshow** for more details, maps and details of public transport. The show will be open from 10:00 am to 4:00 pm and the entry fee remains at £5.

Select 3 Issue 2 released

The latest release of the RISC OS Select Scheme is now available for download from the RISC OS Select Web Site **http://select.riscos.com/**

This version has been tested and is compatible with A7000/+, Risc PC (SA and Kinetic), RiscStation R7500, MicroDigital Mico, MicroDigital Alpha and Virtual RPC-SE. Limited testing has been completed on the Omega, but it is not officially supported in this release.

The upgrade is available for all current RISC OS Select subscribers as well as those whose subscription was due for renewal within the past three months.

Subject to any major bugs that have been undetected, this version will be shipped to subscribers on the next CD, over the next 2-3 weeks.

Some of the new features in this release since the last Select 3i1 release are:

Updated Appletalk Client

Updated versions of the new ToolBox modules (see below)

Updated some components to avoid Castle's undocumented use of Wimp_Extend.

DrawModule now supports path clipping

Plus the usual number of long standing low-level bug fixes.

A fully detailed comparison between Select and RISC OS 5 is available at **http://select.riscos.com/iyonix_select.htm**

Included in Select 3 is an updated release of the Toolbox modules. These have also been released separately (see below), and are compatible with all versions of RISC OS from 3.10 onwards.

For those not familiar with the Toolbox, it was designed with the following goals to:

- facilitate writing consistent, high-quality desktop applications under RISC OS 3.10 and later
- encourage the writing of applications whose user interface complies with the RISC OS 3 Style Guide
- be easy to learn
- be language-independent
- make it no harder to do operations which can currently be done using the Wimp.

The User Interface Toolbox has been designed to be extensible to support any number of Object Classes by the creation of Object Modules which implement those Classes. ResEd (the resource file editor supplied with Acorn C/C++ and also as part of the RISC OS Select Scheme) was also designed so that editors for new Object Templates can be added without the need to alter the main ResEd binary.

The modules are provided for download and installation as a Self Extracting and Installing Archive.

The toolbox module installer, Tbox/ff8, is intended to install updated toolbox modules. You should set its type to &FF8

Stop Press

Paul Reuvers of X-Ample Technology has announced that he has obtained the licence to update and develop Impression, as published by Computer Concepts. This amazing news has sent waves of excitement through the RISC OS market as a huge number of Risc PC owners still use this software and did not want to upgrade to a 32-bit machine because it would only work on the Aemulor.

Paul has stated that his first priority will be the conversion to 32-bit plus the correction of some long-standing bugs. From there who is to say what will be possible. Go to **www.xat.nl**

(Absolute) and then double-click it to run.

Although the modules have been built to be processor and C library neutral, RISC OS 5 does not provide support for softloaded Toolbox modules. Users will be required to manually update their !Boot sequence. Users should contact Castle Technology Ltd for more information if they uncertain how to do this. The new Toolbox resources are available for free download from **http://support.riscos.com/Support/Updates/index.htm**

USB Hub bundled with Iyonix

For a limited period Castle are offering a free 4-port USB hub with every new Iyonix PC ordered in September and October 2003.

This 4 port USB hub allows at least seven USB devices to be attached simultaneously to an Iyonix PC. With the addition of more USB hubs you can simultaneously attach over 100 USB devices to an Iyonix PC. A wide range of USB products are already available for the Iyonix PC ranging from keyboards and mice to memory card readers, printers, scanners, barcode readers and so on. This offer replaces the previous offer of a free memory card reader. **www.iyonix.com**

New book from Alligata Media

DTP Principles has been designed as a platform and software-independent guide to understanding some of the most important fundamentals of word processing and desktop publishing. By concentrating on the universal principles of good document design, this guide provides valuable information for all users of DTP and word processing packages, regardless of their choice of software and computer system. DTP Principles covers such important topics as:

- Planning the structure of a document, from page design to text layout and attributes
- Understanding font styles, and how to choose the right font for your document
- How to present text well, through the correct use of punctuation and embellishments
- The Golden Ratio, and how to use it to give your documents excellent design balance

There are three alternatives for CD-ROMs to be supplied with the guide:

Ovation 1 available in both 26-bit and 32-bit forms, the original Ovation forms the ideal basis for the development of your DTP skills. If you don't have the budget yet for Ovation Pro, it's worth getting Ovation 1 just to see where everything started. (Usual price £11.50)

75,000 Vector clip-art, a packed two-CD-ROM set of WMF files; all of which will convert easily into Draw files for use under RISC OS. We may make this collection available at a later date in Drawfile format, but this will not be offered free with DTP Principles; and will form a part of our standard software range. (Usual price £9.99)

5,000 Photos CD-ROM, 5,000 high quality JPEG images; immediately accessible to RISC OS users and covering a wide range of topics. (Usual price £4.99).

DTP Principles, together with one CD-ROM pack from those listed above, will cost £4.99 plus £1 postage and packing. To order, please call APDL on 020 8778 2659 or write to APDL, 39 Knighton Park Road, Sydenham, London SE26 5RN.

Grapevine upgrade

R-Comp have released version 1.11 of the popular Grapevine Communication software. Grapevine is an internet conversation program, allowing you to use the IRC and MSN cross-platform communication/chat protocols.

Using the software, RISC OS users can keep in contact with friends and family via the Internet, even if they are miles away or on different continents. If your family/friends are online, you can communicate with them while you are online doing Web browsing, e-mail and so on.

Additionally Grapevine allows for easy file transfer, so you can send and receive files without needing to resort to e-mail or other system. This means that you could be talking about a holiday with someone, and in a couple of clicks send them some photos.

1.11 of Grapevine is a major upgrade adding a large number of new features.

Heading the list is a "user" system allowing each family member to have their own settings. This means that parents can have separate settings and contacts to those of the children, or alternatively you could have one set of contacts for business and one for after-hours.

Another major new feature is a logging system. Grapevine has always allowed you to save the conversation history, but you can now enable/disable logging of any conversation or chat session, and the messages will be saved as they appear.

The MSN section of the software now allows you to send multi-line messages (a single message can have line breaks in it) allowing for longer formatted messages to be sent. There are also new sound effects so that you can hear when things happen, even if you aren't actually watching the machine.

The code that handles the list of contact names has been enhanced, allowing for all kinds of esoteric, long contact names. However, you can also over-ride these by specifying your own, preferred contact name, useful for people who like to change their contact names to obtuse things on a regular basis.

On the IRC front, Grapevine now allows the use of FServes for file downloads, and makes it easy to transfer lots of files in one session. Additionally, it now understands some of the extensions introduced by the popular Windows MIRC software.

There's much more, too - the change log for this version is as long as all the other release versions combined! Work has already begun on expanding Grapevine further, indeed 1.11 includes many "behind the scenes" changes to the way the software works in preparation for future upgrades.

Grapevine costs £25 inclusive of VAT and UK delivery.

RComp have also released DataPower Home: a re-badged and improved version of Iota's DataPower 1. DataPower Home can run on versions of RISC OS from 3.1-5.0 (it is compatible with both 26-bit and 32-bit RISC OS

machines).

DataPower Home improves upon DataPower 1, dealing with some major outstanding problems and adding 32-bit compatibility, as well as components from their recent DP2 release. The DataPower documentation has also been updated with tutorials specific to DataPower Home.

The idea behind DataPower Home is to offer users a well-rounded product for sub-£50, without some of the more sophisticated (and perhaps, less often used) facilities present in DP2. It makes an ideal 'starter' product for those not wishing to take the full plunge of DataPower 2.

The main differences between DataPower Home and DataPower 2 are that 'Home' is a "flat file" database (ie. not relational) and lacks the scripting, SQL and data-joining found in DP2.

DataPower Home is a logical upgrade for existing DataPower 1 users who have found no need for the relational and other features of DataPower2, especially as some "show-stopper" faults have been fixed in the new version. Needless to say, it follows R-Comp's trend of disabling the notorious protection system, allowing for simple, quick installation on your machine. Additionally, it is released as a combined 26-bit and 32-bit CD, so the product is future-proofed.

The program also includes graphing facilities, so that you can produce charts and diagrams from your data, to get a clearer picture. The graphing facility includes many types of chart in both 2D and 3D. Results can be printed, or exported into DTP, word processor or other graphics programs.

DataPower Home (single user) CD version £49 inc VAT
DataPower Home upgrade from Iota DP1 £25 inc VAT

R-Comp, 22 Robert Moffat, High Legh, Knutsford, Cheshire WA16 6PS; Tel: (+44) 01925 755043; Fax: (+44) 01925 757377; Web: **www.rcomp.co.uk**

User Group news

BAUG: The oldest established Acorn/RISCOS Group, now in their 22nd year Web site: http://come.to/baug

- September 23rd CD-burning on Iyonix
- October 14th Problem solving Session...
- October 21st No meeting College closed

The RISC OS North West User Group (RONWUG) continues to meet at the Trafford Metrovick Rugby & Cricket Club, Finnybank Rd, Sale, Cheshire M33 6LR on the third Wednesday evening of each month. Admittance and membership are free. For more information, e-mail **info@ronwug.org** or phone 0161 969 9820.

The RISC OS User Group of London (ROUGOL) meets on the third Monday evening of every month, at The Blue-Eyed Maid, 173 Borough High Street, London SE1 1HR. The October meeting features a networking tutorial, connecting RISC OS and Windows XP systems. The November and December meetings will be informal. Admittance and membership are free. For more information, e-mail **info@rougol.jellybaby.net** or phone 07876 035 495.

The ICENI Computer Club meets on the first Wednesday evening of every month, at Bourne Vale Social Club, Halifax Road, Ipswich, IP2 8RE. "Vector Graphics" is the topic for the November meeting, and December sees a Christmas party and bring and buy auction. Entry to your first meeting is free. For more information, e-mail **iceni@woolridge.org.uk** or phone 01255 503048.

HP Deskjet 9300 driver

A RISC OS driver is now available for the just released HP Deskjet 9300 printer. This printer will probably replace the Deskjet 1220 as HP's main A3 capable inkjet.

The driver provides settings to allow either full colour or grey scale printing at both 300 and 600dpi. Specific settings are provided for a variety of media types and print qualities.

An appropriate icon bar symbol, which resembles the 9300, is provided. The driver package also includes appropriate palette files and a 'toolkit'.

The driver should work reliably with RISC OS 4 and Printers version 1.64 or later. Use with Printers version 1.53, or later, may well be possible but is not guaranteed. The driver has not been tested with either the Alpha, Omega or Iyonix computers.

The driver should work reliably either via the parallel port, with the recommended IEEE1284 standard cable, or via the Simtec USB card. Simtec USB setup is straightforward and does not require a modified version of !Printers. Support is not provided for Duplex or Photo-realistic printing.

For more information please visit the Web site: **www.users.globalnet.co.uk/~jbcb/**

Director 0.36 released

Director is a general purpose desktop tool. It allows you to customise your desktop by creating menus of useful commands and icons to attach the menus to. Any number of menus or icons can be created and attached in any order to each other.

Director also allows an alternative and faster view onto files in the form of directory menus and allows these menus to be attached to other menus also.

The application has some other useful features such as remembering the most recently used files, the ability to add key strokes into the keyboard buffer and the ability to produce directory menus over drive icons.

Director is fully customisable by the user, and can do many or all of the functions of Pinboard+, TreeMenu (AKA DirMenu), Filer-, QuickDir, DeskUtils, Memorizer, Menon and some of the functions of Filer+.

There are three archives available for download. The first (director) contains the main Director programs and associated utilities and menus. The second (director-devel) also contains the source code and CVS information. The third (director-docs) contains the documentation in a variety of formats.

All the archives can be downloaded from **http://director.sourceforge.net** or **www.sourceforge.net/projects/director**

Viewfinder adds Radeon

The ViewFinder graphics card for the Risc PC and A7000 now supports ATI Radeon AGP cards. Two new Radeon-equipped ViewFinders are available:

A Radeon 7000 card with 64 MB of

memory (+ TV-out) for 250 Euros and a Radeon 7500 card with 128 MB of memory (+ TV-out and a DVI connector) for 300 Euro inc. 19% VAT. Upgrades for existing ViewFinder users are also available for 150 and 200 Euro including VAT.

ViewFinders with Radeon AGP cards can currently offer the following:

- Your desktop running at up to 2048 x 1536 x 16M colours, 70 Hz.
- Accelerated graphics operations, making desktop use very smooth indeed (up to 20 times faster than an unexpanded Risc PC)
- TV-out capability up to 1024 x 768 (new)
- Dual monitor support (new, in development)
- Full support for 2 and 4 colour modes (new)

More details are become available on: **www.windfall.nl**

RISC OS 4 goes Virtual

RISCOS Ltd and Virtual Acorn have signed an Agreement to allow for the distribution of RISC OS 4 ROM images with the Virtual Acorn range of Emulators. This follows a prolonged disagreement on whether Virtual Acorn actually had a legal license to distribute any version of RISC OS with their VirtualA5000 product.

Paul Middleton, Managing Director of RISCOS Ltd said "I am pleased that we have now reached agreement to allow a fully licensed copy of RISC OS to be shipped with the Virtual Acorn Emulator program. While it is regrettable that the RISC OS market has not seen the launch of the planned RISC OS portable computers, this Agreement will allow RISC OS users to continue to enjoy the RISC OS experience."

Aaron Timbrell of Virtual Acorn went on to say that "We are delighted to be working with RISCOS Ltd and to be supporting the use of RISC OS 4 with VirtualAcorn products. We will continue developing VirtualRPC as both a stand-alone product and for the MicroDigital Alpha."

It is intended that new more powerful versions of VirtualAcorn will supersede VirtualA5000. VirtualRPC is already fully compatible with the RISC OS Select system, and subscribers to the Select Scheme will in the future be able to install a special VirtualRPC version of the Select ROM image to further improve the Select experience.
Software developers interested in exploiting their products using the emulator should contact VirtualAcorn for details of volume licensing of VirtualRPC.

You can upgrade a single user VirtualA5000 to VirtualRPC-SE by returning your old CD (in the jewel case) along with your payment details, either a cheque for £139 (plus carriage) or an accompanying letter with your credit/debit card details.

New versions of VirtualRPC-SE can be purchased for £159+£1.50 p&p which include:

- RISC OS 4 operating system with all the latest updates from RISCOS Ltd.
- Comes complete with the standard ROM based applications such as !Draw, !Edit and !Paint.
- Directly read Acorn format floppy discs on Windows 2000 and Windows XP.
- Directly read Acorn format CD ROMS on Windows 2000 and Windows XP.
- Complete HTML RISC OS user manual with EasyStart front end.
- Virtual ADFS hard disk drive with the latest universal !Boot sequence.
- Support for integrated graphics cards on both laptops and desktops.
- Unlimited hard disk sizes using the HostFS filing system.
- Support for up to 256Mb of RAM (you can allocate up to 50% of your PC memory to VirtualRPC-SE).
- Support for full 24-bit desktops and resolutions up to 1600x1200
- Printing using the supplied RISC OS printer drivers.
- Full commercial versions of Ovation, DrawWorks Millennium, FasterPC and Mr Clippy.
- Sample software packs of Public Domain, Freeware and Shareware programs.
- Access to the many thousands of RISC OS applications available.

VirtualAcorn, 86 Turnberry Home Farm, Bracknell, RG12 8ZH Tel: 01344 452868; Web: **www.virtualacorn.co.uk**

Announcing ROUGPS

Martin Wuerthner, the developer behind Artworks 2, has announced a new initiative for improving the range of printers supported on RISC OS. Developing high-quality printer drivers for photo-real printing is a very demanding task.

Native printer driver developments under RISC OS have fallen behind considerably and this situation is unlikely to change. Luckily, the Linux community has an active group of people working on printer drivers for high-resolution photo-real printing on current inkjet printers (by Epson, Canon, HP and others).

The RISC OS Universal Graphics Printing System (ROUGPS) project aims to create a RISC OS printer driver based on the Linux gimp-print system. It will be able to drive hundreds of printer models at their highest resolutions and with support for different media types and photo-real printing.

As gimp-print is open source software published under the GPL, it is likely that the results of the ROUGPS project will be made available under the same licence. This precludes the possibility of selling it as a commercial product.

Instead, everyone who is interested will be encouraged to donate money to support the project. Nobody is asked to send any money right now, it will only be collected when the project is finished. However, the project will only go ahead if enough users commit to a donation by sending an e-mail stating the amount of money they are willing to donate.

If you wish to commit to funding the project and pledge your "intent" to donate, please send an e-mail to **ro-printing@mw-software.com** with a subject of "Donation" and the sum you are willing to donate in the body of the message (including currency). This will be regarded as a binding promise, so expect a request for that amount of money when the project is finished

You can find more details about the project at: **www.mw-software.com/software/rougps/rougps.html**

Newsletter Clinic

The newsletter's purpose is to inform, update and entertain its readership on a regular, or at least semi-regular, basis. This is true whether it's for a club of 30 members or a corporate publication for a multinational. It's a unique format because they're generally not produced for profit and contributed to by people who, although knowledgeable in their field, are probably not professional writers. For these reasons newsletters possibly need help with design more than other printed publications.

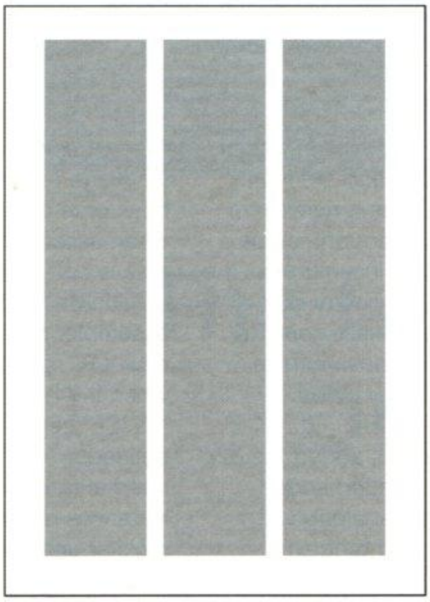
You might say that it's the content of the newsletter which is paramount, and that it doesn't matter how it's presented because if people want the information, they will find it. It's the designer's job, however, to make it easier to assimilate information. If it's hard work, people will be reluctant to spend the time; if it's attractive and entertaining, people will be glad to.

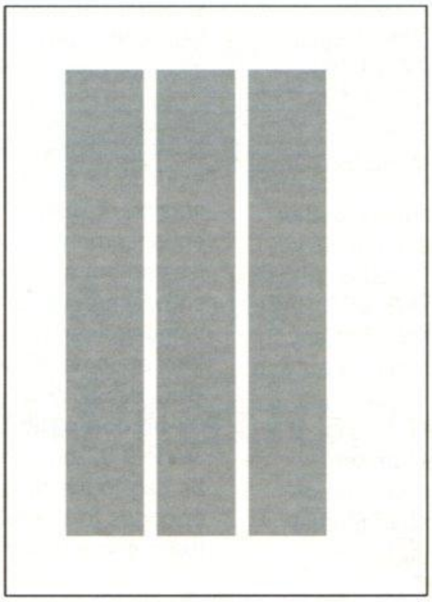
Last issue we looked at "masthead" design: how the title area of a newsletter could be designed in an attractive and professional way. Now we need to look at the body of the newsletter. The secret of good newsletter design is "structure with flexibility".

The structure retains continuity and reinforces company image (if required). The best way to achieve this is by use of a grid or template: a series of design frames into which all the differing elements fit to make a satisfying whole. A desktop publishing package such as Impression is tailor-made for creating grids, but it can even be done in Draw (the text is prepared in Edit, and then dragged into your Draw template and the resultant text area fitted into your column template).

Look at any newsletter, magazine or newspaper and you can see that it's constructed on a grid. However, if you simply stuck to the grid it might get to look tired fairly quickly. This is where flexibility comes in: creative use of headlines, images, drop capitals, all contribute to breaking up the columns of type.

A common grid for newsletters is a three-column grid, and we're going to stick with this for our examples. The columns can be any size, but make them of equal size to each other.







Photos or headlines could fit the width of one column, or two, or three, giving scope for a more interesting overall impression. With a little more creativity, some images could straddle two columns out of alignment with the grid, but the text would flow round the image, preserving the grid lines.

Your masthead will be fitted at the top of the template in a permanent position. Now take some design policy decisions: what font will you use for the main body text? Will headlines and sub-headings be in a different font? Will the use of rules or tinted panels aid the design? When it comes to body type, readability is a prime concern. Fancy fonts are harder to read, so choose a font with a proven track-record of legibility: Palatino ("Pembroke") or Garamond for serif typefaces, Helvetica ("Homerton") or Ariel for sans-serif (or experiment: find a font which you think fits the newsletter). It's often a good idea to vary the headline font to assist variety on the page. A solid sans-serif typeface such as Hull Black works well with both serif and sans-serif body text. Headlines will often span two column, breaking the grid up, while the body text reinforces the grid structure.

Images always enhance newsletters, so use them if you possibly can. Make the image fit the width of one column, or if you're feeling adventurous you could try placing it between columns and wrap the text round it.

Subtle use of rules can help to separate one article from another. Another device is to use a tinted panel behind an article so that it is instantly seen as a separate entity. Within body text, sub-headings can improve readability simple by breaking up the text into easily managed sections.

By using our three-column grid as the basis of the design, and expanding the use of the grid by spanning columns, adding visual devices, we have hopefully presented the information in a more attractive and legible manner. Structure, with flexibility, has helped to get the message across.

Nigel Gatherer
augraphics@acornuser.com

Iyonix applications, part 2

We have been looking at the upgrades and speed improvements that the Iyonix PC can bring to RISC OS users whether programmers or not. And to what degree the speed improvements actually improve matters.

This time around we wrap up the major applications with Photodesk and then look at what lesser applications and utilities have received the upgrade. Plus we look at the good old benchmarks as well as the changes to BBC BASIC.

Photodesk

The 32-bit modifications to Photodesk came very quickly and almost surprisingly. The program itself has not been altered or enhanced in any other way so as far as this overview is concerned what we are really concerned with is the speed improvements.

There is, however, one key difference: the 28Mb limit on application space limitation is gone. This means that Photodesk can load and save much larger images. So let's see what it can do.

Load 783k jpeg 20secs 3secs
Increase contrast 26 secs 1.5sec
Save 15Mb file 16sec 1.5sec

Which just about says everything you need to say. After I had done the tests I started playing with Photodesk experimenting with all the options and it was just incredible. You could try anything because the response was virtually instantaneous.

Lovely.

BBC BASIC

There are two names in the development of BBC BASIC, after its original author Sophie Wilson: Steve Drain and Steve Revill. Steve Drain is a PD author who has developed extensions to BBC BASIC that can be loaded and added to any version. His changes are very clever and very extensive.

The second name, Steve Revill, is someone who has worked on the development of the 32-bit version of BBC BASIC along with other internal changes that were necessary. He's been working on it since 1998 and the Iyonix version of BBC BASIC has a number of enhancements, some important, some less so but all significant inasmuch as it shows that further development of the language can happen. We are going to look at some of the enhancements in BBC BASIC and what they mean.

32-bit compatibility

Made it 32-bit compatible; added the 32-bit flag to the module header; added opcodes to the Assembler along with fixing some minor parsing problems.

A very useful improvement for Assembly language programmers is that ALIGN will now force any unused bytes to zero when assembling at both P% and O%. This is better than leaving possibly uninitialised memory behind. The assembler now correctly recognises the new 'LR' special variable (register 14) when the L is lower-case and also has the 'SP' (register 13) special variable defined.

Internal to the module itself all 408 instances of pushes and pops of a single register using the LDMIA SP! instruction

Upgraded Software (see **www.iyonix.com**)

Account2		
Account2	1.24c	A freeware Home Accounts package. Sub-accounts and categories. Unlimited transactions.
Accountz.com Ltd		
Prophet3+ professional	3.92	Business Accounting Processor
Aemulor		
Aemulor	2.10	26-bit emulation to run 26-bit applications on Iyonix PC
Alex Waugh		
WebJames	0.38	HTTP server
PHP	2.14	A HTML embedded scripting language
Roots	1.16	A program for graphically laying out a family tree
ccache	1.01	A cache that speeds up compilation with gcc
Subversion	0.02	A port of the Subversion version control client
Collision	3.02	A simple LOGO-like game
YABU	1.05	A program to help create backups
Utilities	Various	minor utilities
Alpha Programming		
CocoGnut	1.01	Peer-to-peer filesharing for RISC OS
Andrew C. Poole		
Google	0.63	Utility to allow web searching from the RISC OS desktop
Atomic Software		
Nuclides	1.49	Nuclides is a graphical database containing information on 3000 plus known stable or radioactive isotopes, displayed on a Segre chart.
BASS		
RISC OS port of CVS	1.11.5 (port version 0.20)	CVS (Concurrent Versions System) is a well known version control system.
SysLogD	0.03	Small module which listens to the UDP 514 port and logs all incoming syslog messages using DoggySoft's !Syslog application or RISC OS Select's Syslog module.
Bent Bracke		
Timeless	1.00	Small clock on the iconbar.
Germs	3.03	Replaces desktop welcome screen
Lender	2.02	Keeps track of your stuff.
Bernard's RISC OS Software		
DataWay	0.21	Easy to use, low cost database
Bluewater Systems		
S-Base	2.4i	Integrated Development Environment for RISC OS
Brain Games		
Solitaire	7.18	Wimp game; multi-skinned; multi-featured; user configurable.
Vingt et Un	1.53	Wimp animated card game; multi-skinned; multi-featured; user configurable.
Castle Technology Ltd		
Acorn C/C++ RISC OS Development tools	CDv8a	Contains up-to-date programming tools and manuals. It is the essential product for all RISC OS developers.
Oregano 2	v2.2.15r4	The Web Browser for all RISC OS computers. A host of features ensure that the World Wide Web is available on your RISC OS computer.
USB Podule	n/a	4 port USB podule card for all Acorn computers, allowing the easy addition of USB peripherals.
10/100BaseT network card	n/a	A 32-bit EASI bus 10/100BaseT network card for RISC OS computers.
Cerilica		
Vantage	1.08	The premier vector design and publishing program for RISC OS.
RiScript	4.15	The PostScript and PDF Imaging Package
Chris Hall		
Signalbox simulation	39.0	Full simulation of a mechanical signalbox - Exeter West (131 levers) or Kidderminster Station (62 levers)
Chris Johnson		
GraphDraw	2.65	Graphing and data fitting application
MultiPlot	2.22	Graph production aid
Christian Ludlam		
StrongHelp	2.81	StrongHelp is a hypertext help manual reader.
Colin Granville		
FTPc	1.38	FTP client
PDF	1.01.1.08	PDF file viewer
Colton Software		
Fireworkz 32 for RISC OS	V 1.32/06	Integrated wordprocessor and spreadsheet
David Pilling		
Everything		See website
David Snell		
ProCAD+	1.04b	The CAD package for RISC OS
WebWonder	1.00	Web site creation software for beginners
Director Developers		
Director	0.32	Director is a general pupose desktop tool. It allows you to customise your desktop by creating menus of useful commands and icons to attach the menus to. Any number of menus or icons can be created and attached in any order to each other.
EnVision Software		
EnBank	2.03-000	Multi-currency Account Package
ExpLAN Computers Ltd.		
HolyBible	2.06	HolyBible is a multi-windowed, multi-version Bible study application with high-quality text display and sophisticated search facilities.
Gavin Wraith		
Awk	v271102	An implementation of The

have been replaced with an LDR/STR equivalent, which provides a small performance boost on StrongARM-like processors and some obscure bits of the source code have had explanatory comments added.

Tracing

TRACE PROC (and the identical TRACE FN) now flushes the VCACHE when it is encountered. This is important, because procedure and function call locations are normally cached to avoid looking-up the name and searching for the location of the DEF aprt from the first time.

When tracing is active, we don't add any procedure or function calls to the cache, because we can't output the name to the trace output (without parsing it and hence slowing down cache behaviour). So, we now flush the VCACHE at the start of PROC/FN tracing so that all calls are reported (before, the cached ones would not appear in the trace output).

TRACE ENDPROC has been implemented to allow the output of 'ENDPROC' and 'ENDFN' in the trace output whenever a procedure or function is exited. This complements the TRACE PROC/FN functionality.

QUIT [+[expression]+] has been added to allow a return code to be passed back to the calling environment when BASIC exits. This is the only sensible way for a BASIC program to set Sys$ReturnCode on exit, other methods get trashed when BASIC removes its environment handlers.

Graphic changes

There is a new syntax for MODE:
MODE [+[width]+],[+[height]+],[+[bpp]+] [,[+[framerate]+]]
This uses OS_ScreenMode 0, rather than *WimpMode. The bpp may be 1, 2, 4, 6, 8, 16 or 32. 8 selects a full palette 256-colour mode, 6 an old-style one.
COLOUR and GCOL both allow colour numbers rather than old-style colours. Also, background colours can be set with R,G,B forms.

COLOUR [OF f] [ON b]
COLOUR [[OF] r,g,b] [ON r,g,b]
GCOL [OF [[+[action]+]],f] [ON [[+[action]+]],b]
GCOL [[OF] [[+[action]+],]r,g,b] [ON [[+[action]+],]r,g,b]

For COLOUR R,G,B, the OF is unnecessary, but provided for uniformity. For GCOL R,G,B, OF tightens up the usage of [+[action]+], without it [+[action]+] is passed in to both R3 and R4 of ColourTrans_SetGCOL for backwards compatibility. Some may have used GCOL 128,r,g,b to set the background colour, although this ends up setting reserved flags in the ColourTrans_SetGCOL call.

Screen modes have a set of VDU variables which you can read and write with an OS_ call, however the VDU command has now been extended to operate as a function so that x%=VDU(n) returns the value of the specified VDU variable.

Compatibility

TIME$= has been modified to pass a terminated string with a valid reason code to OS_Word 15 when TIME$ is set, rather than passing an unterminated string with the length as the reason code. Necessary for territories where %w3, %dy or %m3 are unusual lengths.

BASIC will now give up unused application space if possible at certain moments: during SYS calls (as long as no string parameters are passed in), MODE changes, OSCLI and commands. Also, it will not refuse requests to grow application space although it will not expand into the extra space unless the

		One True Awk programming language (v.20020628) with an easy desktop interface.
RiscLua	2.31	RiscLua, now a module, is a powerful scripting language for Risc OS that can also be used for wimp programming.
Velcro	26.11.02	Velcro lets you stick applications to the iconbar so that you can pass parameters to them by dragging.
Weave	1.3	Weave is a description language for websites and an application to create them from weave scripts.
Startup	1.02	A small module to inhibit the display of the welcome banner at startup.
ClibPDF	2.02-r1-2	FastIO's C library for constructing PDF documents.
MakeALF	2.00	MakeALF is Gareth McCaughan's tool for creating and manipulating object file (AOF) libraries.
PicSize	0.1	Find width and height in pixels of GIF, JPEG and PNG files. It comes in the Velcro package as an example.
Splitf/Joinf	1.13	Adam Hamilton's command line file splitter/joiner.
Icon Technology Ltd		
EasiWriter Pro+	8.10	EasiWriter is a fully featured word processor with the ability to read and write Microsoft Word documents.
TechWriter Pro+	8.10	TechWriter is a fully featured word processor with a built-in equation editor. It can also read and write Microsoft Word documents..
Image Software		
EBMS	1.30	Retail management software.
Money Manager 2002	2.01	Personal accounts package.
Intelligent Interfaces Ltd		
IEEE488 (GPIB) Interface Expansion Card	3.00	For communicating with laboratory instruments.
16 Bit Parallel I/O Expansion Card	2.00	For a wide range of digital I/O applications.
Dual High Speed Serial Interface Expansion Card	4.00	For high speed Internet access and all other applications requiring RS232 compatible serial communi-cations.
Upgrade ROM for Single and Double Width I/O Expansion Cards	3.00	Upgrade ROM for Single and Acorn Double Width I/O Expansion Cards.
Upgrade from Original RS423 to High SpeedSerial Interface	4.00	Upgrade from Original RS423 to High Speed Serial Interface.
User Port Expansion Card	0.02	Provides RISC OS based computers with the User Port of the BBC Microcomputer.
12 Bit (Irlam Instruments ADdsp) Analogue to Digital Converter Expansion Card	5.00	For a wide range of analogue input applications.
Jaffa Software		
WimpWorks	2.34	An integrated development environment allowing the rapid creation of multi-tasking BASIC applications without having to understand the complexities of the WIMP.
Jamie Temple		
MiniDisc	0.52	Desktop Management Software
Joseph Heenan		
POPstar		Email fetcher/sender
NewsHound		Usenet news NNTP transport
FreeTime		Internet time client
WebGet		Recursive web page fetcher
KeyNote		
Charges	2.80	Work manager application for monitoring time spent on jobs at the computer
SharpEye	1.27	Optical Music Recognition (OMR) package
Liquid Silicon		
FreeMem	1.14	Free memory & time display
MW Software		
GhostScript	7.03	PostScript interpreter available for many platforms with the ability to turn PostScript files into RISC OS sprites.
GView	1.40	Front-end for GhostScript, turning the latter into a desktop PostScript previewer.
RasMol	1.40	Molecular graphics visuali-sation tool available for many platforms.
XChars	1.20	Advanced character picker (the new !Chars application in RISC OS Select)
DiscSpace	1.20	Graphical disc usage display
AppDock2	2.50	NeXT style application launcher
MW Software/Computer Concepts		
AWViewer	1.61e	ArtWorks file viewing utility and provider of ArtWorks rendering modules for third-party applications
Formulix	2.11	Formulix is a stand-alone formula editor that integrates with word-processors via the OLE protocol.
ArtWorks 2	2.04	The most popular advanced graphics design application for RISC OS
Maarten Bezemer		
NetWatch	1.64	!NetWatch is a program which (automaticly) checks for updates on the web.
Martin Avison		
ArmSort	3.20	Module to enable BASIC programs to sort arrays.
TaskUsage	1.60	Displays the processor usage overall, and for each Task.
Reporter	2.50	Debugging aid for Wimp programs and Obey files, displaying information in a separate debugging window.
Martyn Fox		
!Clear module	1.32	Selects and inverts a writable icon with a double-click to facilitate text replacement.
Michael Foot		
BeebIt	0.50	BBC Micro computer emulator


www.thepcmanuk.com
Apollo V8XMX
XP2200+ 128Mb 30Gb
CDROM 17" CRT KMS XPH 1onsite
> Athlon XP 2200+
> 128Mb DDR333 RAM
> 30Gb 5400rpm Hard Drive
> 52x CDROM
> Monitor 17" CRT
> Windows XP Home
> 300W ATX Midi Tower Case
> Floppy 1.44Mb
> 6x USB ports
> VGA Integrated VIA UniChrome Graphics
> -Trend Micro PC-cillin 2002 anti-virus softwar
£398.77 inc VAT
Orion V8XX
XP2600+ 256Mb 80Gb
CDRW 64Mb GeF 4 17" CRT KMS XPH 1onsit
> Athlon XP 2600+
> 80Gb 7200rpm Hard Drive
> 52x24x52 CDRW
> 64Mb GeF4 MX440 Graphics
> Monitor 17" CRT
> Windows XP Home
> ATX Midi Tower Case
> Floppy 1.44Mb
> Memory 3 x DDR DIMM Sockets
> 6 x USB ports
> IDE 2 x UltraDMA/133/100/66
> ADI 1980 6-channel CODEC Audio
> ASUS LiveUpdate Utilit
£503.50 inc VAT
Sirius N8XX
XP2600+ 512Mb 120Gb
Combi FX5200 17" CRT KMS XPH 1onsit
> Athlon XP 2600+ Processor
> 120Gb 7200rpm Hard Drive
> CDRW/DVD Combi
> 128Mb GeF FX5200 Graphics
> Monitor 17" CRT
> Windows XP Home
> ATX Midi Tower Case
> Floppy 1.44Mb
> 6x USB 2.0 ports
> Realtek® ALC650 6CH w/built in HP amplifier
> ASUS® PC Probe
> Trend Micro™PC-cillin 2002
> ASUS LiveUpdate Utility
£596.32 inc VAT
Sirius N8XX X
P3000+ 512Mb 120Gb
Combi FX5200 17" CRT KMS XPH 1onsit
> Athlon XP 3000+ Processor
> 120Gb 7200rpm Hard Drive
> CDRW/DVD Combi
> 128Mb GeF FX5200 Graphics
> Monitor 17" CRT
> Windows XP Home
> ATX Midi Tower Case
> Floppy 1.44Mb
> 6x USB 2.0 USB
> built in HP amplifier
> ASUS® PC Probe
> Trend Micro™PC-cillin 2002
> ASUS LiveUpdate Utilit
£699.24 inc VAT
contact> sales@thepcmanuk.com
tel> 01750 505090 fax> 01750 505091
Quote Ref: MM25 when placing an order and receive a free copy of Microsoft Works 6.0 plus Money 2001.
thePCman
Unit 2 Ettrick Riverside, Dunsdale Road
Selkirk, Selkirkshire TD7 5EB


Maximans Computer Media
EPSON Compatible Cartridges
Lots more great deals on the website
1 Black + 1 Colour..........£5.95
2 Black + 2 Colour........£10.95
3 Black + 3 Colour........£14.95
5 Black + 5 Colour........£21.95
10 Black + 10 Colour........£39.00
C20/C40/400/440/460/480
500/580/600/640/660/670
PhotoEX/700/740/750/760
800/850860/880 and more...
NEW PRICES * NEW PRICES * NEW PRICES * NEW PRICES
EPSON Compatible Cartridges
C42/C44/C50/C60/C62/680/790/870/875D
810/830/890/895/900/915/925/1270/1290
1 Black ....£5.95 1 Colour £6.50
5 Black ....£19.95 5 Colour £23.95
1 Black + 1 Colour £10.95
2 Black + 2 Colour £17.95
3 Black + 3 Colour £25.50
4 Black + 4 Colour £33.95
5 Black + 5 Colour £41.00
EPSON C70/C80/C82 Compatible
1 EPSON FULL PACK NOW ONLY £21.00
2 EPSON FULL PACKS NOW ONLY £38.00
ANY 3 EPSON COLOUR Cyan,Yellow,Magenta NOW ONLY £16.95
Compatible LEXMARK Compatible
Black......£12.25 C6614A Black......£12.95
51626A Black......£12.25 C6615A Black......£12.95
£12.50 C6578 Colour....£18.00
51649A Colour £16.50 C6625 Colour....£16.50
51625A Colour £16.50 C1823 Colour....£16.50
13400HC........Only £15.50
13619HC........Only £18.00
12A1970 ....Only £15.95
12A1980 ....Only £16.95
17G0050 ....Only £15.95
17G0060 ....Only £16.95
15M0120........Only £18.00
EPSON TWIN PACKS FROM £3 90 ON OUR WEBSITE
SPECIAL C70 / C80 ONE FULL PACK £18.00
SPECIAL C70 / C80 TWO FULL PACKS ONLY £34.95
SPECIAL BUY TWO HP CARTS C6578A ONLY £32.00
SPECIAL BUY TWO HP CARTS 51645 ONLY £21.00
SPECIAL BUY TWO HP CARTS C6615 ONLY £23.00
Special Offers On Our Website
Maximans Computer Media
Municipal Buildings ❖ Crieff Road
Aberfeldy ❖ Perthshire ❖ PH15 2BJ
www.maximans.co.uk
Tel: 01887 829477
Free Delivery
VAT Inclusive Prices
Same Day Dispatch
No Minimum Order
Online Ordering
Credit Cards Accepted
No Card Surcharges


OPEN YOUR MIND TO MICROPAYMENTS
SMS & PHONE PAYMENTS
CHARGE FOR CONTENT
CHARGE FOR SERVICES
FREE INSTANT SIGN-UP
GREEN LIGHT
"Best Micropayment Provider" Internet Works Magazine
If you run a website or are planning to set one up, then you could benefit from Green Light
Our innovotive solution enables you to take small payments for your online content or services - and no need for credit cards!
Your customers pay by SMS or telephone, and the charge simply appears on their phone bill.
You decide what to charge for and how much to charge, and Green Light does the rest.
Why not see what Green Light can do for you...
Green Light micropayments
www.glpay.com 0870 745 9131

HIMEM command is used.

Application space is only surrendered if no library is INSTALLed, HIMEM is set to the top of BASIC's memory, and BASIC's memory extends to the top of the application slot.

This permits easy MODE changes and so on, outside the desktop. Note the effect that now outside the desktop, with screen memory at [+[300K and no free pool, MODE 28 will work, while VDU 22,28 will not. This restores some long lost behaviour from the 8-bit BBc Micro days.

*BASIC will now return an error if it fails for any reason. This is slightly more polite than the SVC mode infinite loop it used to go into.

Programming

A new DIM LOCAL statement has been added with the syntax

DIM [+[numeric variable]+] LOCAL [+[numeric expression]+]

DIM LOCAL allocates space from the BASIC stack rather than from the heap. This means that the space allocated is automatically freed on exit from the PROC or FN in which it was claimed.

As with all LOCAL statements, it must appear in a PROC or FN definition and cannot appear inside a structure which uses the stack (like FOR..NEXT) or after a LOCAL ERROR.

Much like the manner in which "DIM foo% -1" returns the value of the top of used memory without allocating space, "DIM foo% LOCAL -1" returns the value of the stack pointer at the time of the request, without allocating any space from the stack. This can be useful in computing the free space between the top of the BASIC heap and the bottom of the stack. Of course, the stack is used by BASIC while interpreting the program, so the contents of memory below foo% should always be treated as undefined.

One caveat of using DIM LOCAL is that the stack cannot be moved while there are DIM LOCALs defined. END= will return an error and any Service_Memory calls will be claimed for the duration of the DIM LOCAL.

The expression evaluation in the BASIC WHEN statement had an omission where it could skip past a syntax error without generating any error.

For example, "WHEN (R%]+]]+]25) AND 1)=1 : do something" would not return an error (unmatched parentheses) because the expression is complete and evaluated up to the "AND 1". Once this is found to not match the condition of the CASE, BASIC searches forwards for the next ",", "WHEN", "OTHERWISE" or "ENDCASE", skipping over the ")=1" part.

Changed this so that, after the expression is evaluated and found to not match, BASIC already checks to see if the next char is a ",". If not, we check for a ":" or CR before scanning forwards. Any other char is a syntax error.

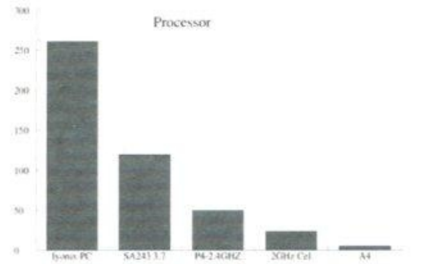
Summary

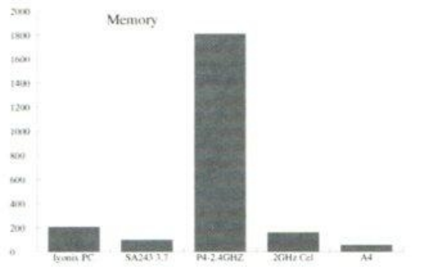
Some useful changes there, particularly in the colour control and tracing areas. There are a lot more changes that could be made but until this version of Basic is made available to every owner of RISC OS there are limits to the changes to be made. After all there's no point using DIM LOCAL in a new program if only Iyonix owners can use it.

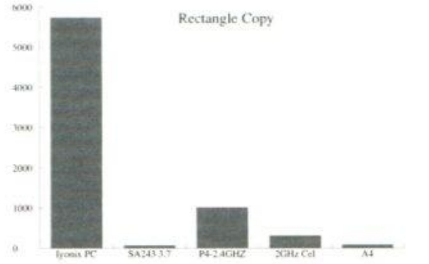
RISC OS Benchmarks

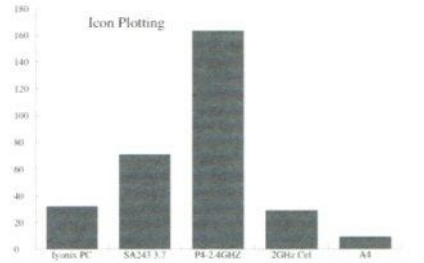
Many moons ago benchmarks were all the rage in computer magazines. The magazine PCW even made an effort to have a standardised set of benchmarks that could be applied to any type of computer. Unfortunately it doesn't really work between types because ultimately

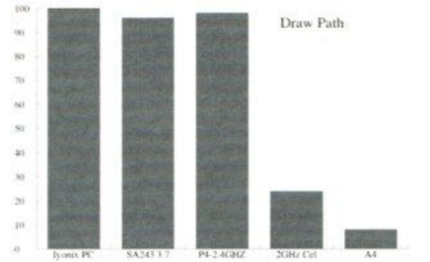
MidiWays (Lenny)		
Historian	0.18	Edit Fresco's history list.
Syncopath	0.14	Drive synchronisation type disc backup, acting as a frontend to David Pilling's SyncDiscs.
Swish	0.13	Produces SWI listings as plain text or in C/Ada header formats.
Verma	0.22	Reveal info about modules in memory or on disc.
Midiphile	0.23	A utility for cleaning or interpreting MIDI files.
Mixer	0.20	Control the relative volume levels of the internal sound, CDROMs and SharedSound handlers.
Murklesoft		
Minesweep	1.01	Minesweeper for RISC OS plus bonus BBC Micro version. Free download.
Cabriolet Dynamic Geometry	2.51	Cabriolet Dynamic Geometry has been fully tested on Iyonix. A free upgrade to v2.51a is now available from www.borcherds.co.uk Full version available for purchase from Icon Technology Ltd.
6502Em	3.10	The definitive BBC Micro emulator for RISC OS. NOW IN TESTING
Nick Roberts		
BookMaker	1.76	Browser hotlist manager
Rename	3.10	Bulk file renamer
BDRand	3.25	Backdrop randomiser
SprUtils	1.10	A collection of sprite utilities
MakeTable	0.26	CSV/TSV HTML Table converter
ASM	5.01	ARM macro assembler
tbxdiag	0.10	Toolbox problem diagnosis
rex	0.33	Recursive *Ex
lharc	0.30	lha compression utility.
DtLHARC	0.14	Desktop front-end for lharc (above)
PlayKISS	4.42	Player for the KiSS (Kisekae Set System) paper doll game.
MakeKISS	2.52	Development system for the KiSS (Kisekae Set System) paper doll game
KISSTools	0.95	A set of developer utilities for the KiSS (Kisekae Set System) paper doll game.
OSLib Development Team		
OSLib	6.40	Provides a C and Assembler interface to the RISC OS API
Octopus Systems		
Caller Display	2.74	Displays the caller's telephone number when the phone rings and logs call details. Links to other programs. Network version available.
Teletext+	7.25	Advanced teletext software which enables existing Teletext cards and adapters to be used on the Iyonix PC. Features powerful script language, automatic data logging and alarms.
G-raph	1.00	Graph plotting program draws graphs from data files or equations. Bar charts, line graphs, log graphs etc. All exportable as a Draw file.
Paul Skirrow		
ImpChars	1.00	A utility to enable characters in specific fonts to be entered easily into Impression
Paul Vigay		
NeXTBar	1.10	A very flexible application launcher
AntUtils	1.53	Add lots of useful utilities to the Ant Internet Suite
ArcLink5	0.16	Psion EPOC to RISC OS transfer utility
Ent	1.01	A port of John Walkers Entropy test
CodeGroup	1.01	Port of John Walkers CodeGroup
FontCat	1.02	Display the fonts installed in your computer.
Dingbats	1.01	Easily enter Dingbats characters
Dilbert	1.01	Desktop silly
LockDir	1.06	Lock directories from opening within the desktop.
FresUtils	1.05	Add a number of useful features to Fresco
Lottery	2.04	Predict and analyse the National Lottery numbers
PVupdate	1.04	Multi-purpose updater for my software.
Disc Commander	2.50	Powerful disc editor and toolkit
Shanghai	1.04	Ancient Chinese strategy patience game
VZap	1.37	RISC OS Virus scanner and inoculator
Steg	1.02	Steganography application for creating random backdrop images from data.
Tiler	1.02	Generate random looking backdrop tiles
BlackJack	1.01	A desktop version of the patience game.
Peter Naulls		
GCC	2.95.4 Release 3	GNU Computer Collection
DeskLib	2.50pre3	Easy to use Wimp library
Philip Ludlam		
WebMan	0.06	Webman is a simple, clean, fast tool to help with the management of websites.
FilerHRun	1.21	FilerHRun is a simple module that provides an alternative command to Filer_Run
BubbleHelp	2.11	!BubbleHlp is an interactive help application, originally written by Miles Sabin.
Photodesk Ltd		
OHP 2.5	2.51	Full screen presentation package
Photodesk	3.05 (32-bit)	Photo and bit-map

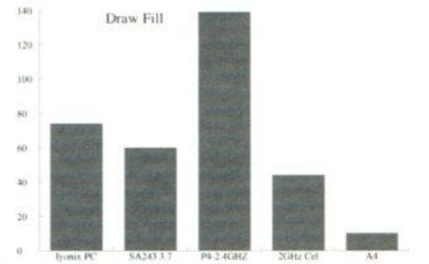










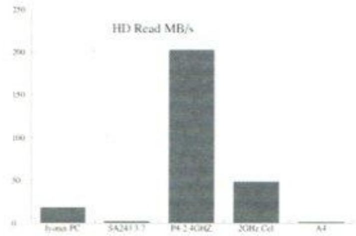


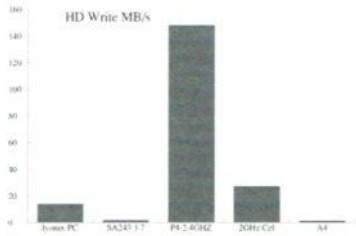
it's the user interface that makes all the difference.
However given a standard user interface it does become reasonably useful to have a set of standard tests to compare different hardware/software configurations of essentially the same computer. For example all PCs, or all RISC OS computers. Because, for example, the user interface does a lot of graphical plotting, if a particular machine is faster at graphics then its user interface will be smoother.
Enter Richard Spencer who spent an afternoon devising a set of RISC OS benchmarks which will work across the range of machines and can be used as a basis of comparison for the different makes and set-ups.
His "ROmark" performs 10 tests each of which is timed to last one second, and calculates how much it gets done in this time. This is then compared with the standard benchmark for that test obtained on his 202MHz StrongARM Risc PC which provides the standard baseline. A log file of the results is produced and loaded into your default text editor. If you get a rating of 200% it means that your computer is twice as fast as the standard, 33% means one third of the speed, or that it would take three times as long to perform the same task.

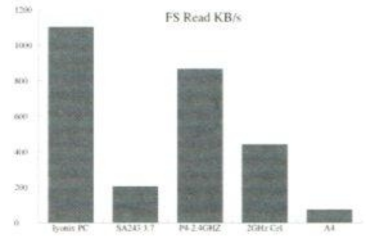
		manipulation application
Pineapple Software		
ABC Compiler	4.12	BBC Basic Compiler
Anti-Virus Protection	4.003	Virus detection and removal
Scheme		
Quantum Software		
Keystroke	V4.03	Powerful macro-processor for automating many tasks on the desktop.
Blinds	V1.26	Document and application desktop organiser.
R-Comp		
SiteMaster 2	2.32	Website management system, analysis and uploading tools.
Messenger Pro	2.70	Leading RISC OS email/news system
WebsterXL	1.99r-32	Feature-laden RISC OS web browser with many advanced facilities, designed to take advantage of Iyonix hardware
HTMLEdit Studio		Web authoring suite
GrapeVine		MSN and IRC internet conversation and file transfer system
UniPrint	1.02	Print to any printer connected to a Winodws PC over a network, even if no RISC OS driver exists. Allos photo printing!
Network Printer Drivers	2.00	Print to network attached laser printers and printers connected to print server boxes via lpr and jetdirect
NetFetch	1.32	Internet "front end" and mail/news system for Network/Broadband internet users - DialUp without the Dial!
Messenger Pro Online	2.70	Extended version of Messenger Pro with support for accessing local network email/news servers via IMAP/NNTP
EasyClip		Clipart and graphics

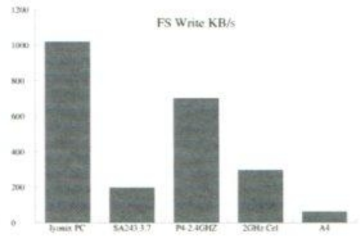
		database/manager with many facilities
DataPower 2	2.26 / 2.32	Easy-to-use, relational database with multimedia, scripting, SQL and many more features.
Image Outliner	1.03	Comprehensive package for tracing Sprite (bitmap) files into Draw (vector) for DTP work
Remote Control	1.13	Allows you to control a Windows PC directly from your Iyonix
Quake	1.23	Famous 3D action game
Richard Hallas		
KeyWindow	1.63	Handy on-screen function key strip
OmniDesk	1.20	Modular desktop utility manager which acts as a front-end to a suite of utilities
Rick Hudson		
PlayIt	1.68 beta 2	Multi-format disc-based sound file player.
Thump	1.48 beta 1	Multi-format image thumbnailer and viewer.
MovieDB	1.42 beta	Off-line Internet Movie Database browser
ROCchart	2.25	Star chart software
Astrobase	1.02	Astronomy database engine
SoundCon	1.63	Sound format converter (also player for 8-bit sound hardware).
Soft Rock Software		
WebChange	2.40	Website maintenance tool
Sprow		
Various modules		MenuUtils, Usage, OLESupport, FiveToString, RMSave, UnCrunch.
PICsuite	1.39	PIC assembler,disassembler,and simulator (parallel port programmer still to be converted)
ParallelDeviceDriver	0.21	For compatibility of direct access via USB to parallel

		converter leads
DFSreader	0.18	A simple filer to read from BBC micro DFS format discs.
BarCode	1.05	Create barcodes and save them as Draw files
Stefan Bellon		
GnuPG	1.2.3-sb1	Free implementation of OpenPGP standard (RFC2440).
Stephen Fryatt		
Pairs	0.32	Desktop card matching memory game.
Crosses	1.00	Desktop Noughts and Crosses
Master	0.10	Desktop 'Mastermind' Game
Solitaire	0.10	Desktop Solitaire game
Locate	0.86	Comprehensive file search utility
Float	0.36	Interactive help client
AwkScan	1.05	Archive Magazine search tool
Tank Stage Lighting		
Serial2	0.55	Atomwide Serial Card Driver
UPS	0.21	Belkin UPS display software
The ARM Club		
TypeTutor		Touch typing tutor
DiscKnight	1.39	Checks and fixes disc errors
WorkSpace	2.61 (18-Jun-1998)	Provides 6 desktop workspaces to prevent cluttered screen.
FreeMap	3.17 (21-Feb-2001)	Graphical display of free space on a disc.
ComndCtrl	2.61 (18-Jun-1998)	Desktop front end to *commands for drag and drop launching.
GraphTask	4.01 (01-Oct-2001)	un graphical programs in a taskwindow, with MODE 7 support
Gamma	2.51 (12-Jul-1995)	Brightness/Contrast/Gamma control of the screen in any mode.
PinPlay	0.42 (06-Nov-2002)	Play up









On some machines a difference in the screen mode alters the plot time, so a standard screen mode should be used, the one used is 800x600 in 256 colours to establish the baseline.
When the program is run the screen will blank and will has "Running Test 1 (Processor)" at the top. If all goes well after about 10 seconds it will say "Tests complete." and return you to the Desktop. The log file (with a name like "log12345") will load and display. However if you close the window without saving it the log will be lost.
This program has been tested on RISC OS 3.1, 3.7, 4.02, Select, 5.02 and 5.03 using the hardware including Iyonix PC, StrongARM Risc PC, Kinetic Risc PC, VirtualA5000, RedSquirrel, A7000 and A3010.

The tests

"Processor" creates a [+[4k long loop which is small enough to fit in the ARM 7 instruction cache (and the StrongARM, of course). This is then iterated for 100cs until the interrupt timer sets a memory semaphore and the routine returns the number of iterations to the main program. This benchmark is roughly analogous to a MIPS rating.
"Memory" uses multiple register load/stores to see how fast the memory bus is, rather than the core CPU with its data cache.
"Rectangle Copy" does exactly that. If you have a Viewfinder I would expect this to give a high benchmark since it is done by the graphics card rather than manually by the CPU. Later versions of VirtualA5000 seems to perform very well on this test. When you move a window in the desktop it is an OS rectangle copy, however the time is spent redrawing whatever it was it had obscured.
"Icon Plotting" creates and plots a simple 16 colour icon with a mask and palette in the current mode.
"Draw Path" plots a "thin" line in a colour selected by ColourTrans.
"Draw Fill" plots the same shape but filled in.
"HD Read/Write" block loads/saves a 1MB file. The obtained benchmark is in kilobytes/sec
"FS Read/Write" reads/writes a large file one byte at a time, again giving a kilobytes/sec reading.
Richard personally feels that the potential productivity benchmark is more or less related to the square root of the speed which means that for most people in PC land, spending £200 more on a processor that is 5% faster is a waste of money. Note the use of the word potential, this can be easily negated by a clunky OS/application. Other people may say that a speed differential of less than factor 2 is irrelevant to the amount of useful work a person can do on a machine, after all you can still type a letter on an 8-bit BBC Micro.
Check out **www.richardspencer.freeuk.com/riscosmark** for the latest version of the program.

Benchmarks

The following table is based upon other people's benchmarks. The results are percentages data rates used for harddisc tests rather than percentages. For the others 100%=SA202 RiscPC running RISC OS 4.02. All tests were done in 256 colour, 800x600 screen modes apart from the A4 which was in VGA16. The PC benchmarks were obtained using VirtualA5000, Iyonix was running RISC OS 5.03 with DMA enabled.

		to 9 Replay movies on the pinboard.
APPstat	1.22 (15-Nov-2001)	Timing and call count statistics on running applications.
SWIstat	2.12 (17-Nov-2002)	Monitors SWI call activity on entire machine or selected t
SERVstat	1.01 (17-Nov-2002)	Monitors Module Service call activity.
VECstat	1.01 (17-Nov-2002)	Monitors calls to system vectors with reason code display.
CPUload	3.22 (18-Aug-2001)	Accurate CPU usage graphical monitor.
ARMalyser	0.41 (08-Dec-2002)	Analyse all RISC OS executable and object formats for 26 bit only instructions. Produce disassembly or assembly output in text, HTML, XML, Impression, EasiWriter formats.
Countdown	3.02 (21-Mar-1994)	Solves Channel 4's Countdown words and numbers puzzles.
SPRtools	1i (26-Nov-2002)	Bitmap format conversion and image processing tools.
ADFSeject	1.10 (24-Nov-2002)	Dismounts a floppy by clicking on the drive icon with adust.
CDFSeject	1.30 (24-Nov-2002)	Ejects the CD by clicking on the CDFS icon with the adjust.
SCSIeject	1.10 (24-Nov-2002)	Dismounts and ejects a removable SCSI disc using adjust click.
ZIPeject	1.10 (24-Nov-2002)	Dismounts and ejects a ZIP disc using adjust click.
TimerMod	4.00 (25-Nov-2002)	Provides SWIs and *commands for timing to microsecond accuracy.
WindOpen	1.92 (29-Oct-2002)	Manipulates windows using *command's in obey files.
Theo Markettos		
CryptRandom	0.10	Generator of cryptographically useful random numbers
SHA1	0.02	Module to compute Secure Hash Algorithm SHA-1 digests
SSHProxy	0.18	Secure shell (ssh) to Telnet converter
pscp	0.49b7	Secure copy (scp) command line client
SVCUtils	0.04	Module to access protected memory in user mode
ps2txt	2.1	Utility to extract text from Postscript files.
HardBack	3.100	Hard disc backup system
Tom Hughes		
LinkFS	2.04	Provides symbolic links to directories
HTMLcheck	1.12	Validates HTML files
WimpMon	2.07	Traces messages passed between Wimp applications
SysLog	0.19	Provides a central logging facility that can be used be programs to log information.
Vermilion Sands		
PSbrush	0.30	Convert Photoshop and Paint Shop Pro brush files for use in Photodesk
EXIFinfo	0.57	Extract useful photographic information and thumbnails from digital camera JPEG files.
X-Ample Technology		
Enigma	1.30	Simulation of WWII encryption device.
ConfiX	0.44	Universal Configuration Utility
CableNews Professional	3.00	Professional tool to create and broadcast live transmission of a news caroussel.
USBInfo	0.35	A generic USB viewer that shows all devices connected to your USB system.
AltKeys	3.00	Relocatable module to allow easy entering of foreign and special characters.
Zap Developers		
Zap	1.46	Zap is a fast text/memory editor.

Steve Turnbull
steve.turnbull@acornuser.com

SE Show

After the fantastic success of last year's Guildford Show, the organisers (Fillin Ltd and SASAUG) are planning to do the same again. And we want to help. Getting to an event is always the worst bit so here's some useful descriptions of where it is, how to get there and how much it costs to get in.

Saturday 18th October 2003 only
Doors open 10:00am to 4:00pm

Walkers Guide

A pedestrian's description of the walking route from the Main Station to Guildford College:

Bear right as you leave the main entrance of Guildford Railway Station, passing the bus stop and heading towards the one-way traffic system.

Turn left onto Bridge Street, walking along Bridge Street in the same direction as the traffic.

At the next junction, turn left onto Onslow Street and continue until you come to the pedestrian crossing where you can safely cross onto the right side of the street. (This is before you get to the roundabout.)

Continue along Onslow Street until you get to the roundabout where you must turn right into York Road. Don't cross York Road at this point.

Walk along York Road until you can safely cross the road to the left side. The safest way is to use the pedestrian subway a short distance along the road.

Turn left at the junction with Stoke Road. Walk along Stoke road for about 650 metres (725 yards) and see Guildford College on your right. Enter and go to Reception which is next to the hall.

By Car: M4 J10 via Bracknell

Exit M4 at Junction 10 A329M signposted for Bracknell, Wokingham.

Continue past Coppid Beech Exit, Continue past the Motorway end. Railway Line to your left.

Straight on at roundabout; 3rd Exit at 'Twin Bridges' (Light Controlled) signposted for Crowthorne, not any sign to the (M3)

Straight on at roundabout; the next roundabout has 'spiral lane' markings. The correct approach lane is the Right Hand Side; take the 3rd exit signposted for Crowthorne.

Proceed over Bus Controlled Traffic Lights. (Prepare to stop if you see a bus in either side road)

Straight on at Roundabout onto Dual Carriageway; straight on at Roundabout onto Single Carriageway (Crowthorne Traffic went to the right).

The 'Link Road' proceeds past Broadmoor Hospital on the right; descending the hill.

Straight on at the three minor roundabouts skirting 'Owlsmoor'; straight on at 'The Rackstraw' Traffic Lights onto Marshall Road; straight on at minor roundabout and junction.

Proceed past M&S and Tesco Extra at 'The Meadows'; Cross the A30 at Blackwater: The Meadows Roundabout (light-controlled). Signposted for M3 (J4) and A331.

Straight on through three more light-controlled junctions towards the M3. Approaching the roundabout, two lanes can go left. Traffic from the M3 (South West) joins here.

Proceed Left, under the bridge and take the mid-lanes at the lights controlling access to the southern roundabout.

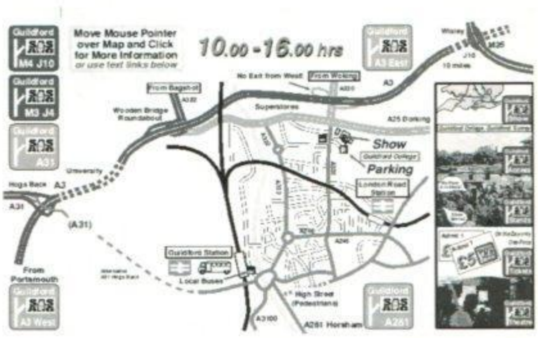
Proceed onto the A331 keeping right to avoid the Camberley and Farnborough traffic exits.

Proceed to A31 Hogs Back; you will pass under the Basingstoke Canal en route.

Proceed East along the A31 Hogs Back (Various Speed Limits); approaching Guildford bear LEFT onto the A3 (signposted for London).

Do not follow the A31 towards Central Guildford.

Proceed past the University exit; Take the Wooden Bridge Roundabout exit. If you miss this exit, you have a long journey to the next exit.



Use the Righthand Lane at the Slip Road Lights; Traffic from Bagshot has a protected left exit lane ahead.

Continue straight on (leaving the roundabout in the right hand lane); the Dual Carriageway passes under the railway.

Proceed on past the Superstores; ignore the A322 route to Guildford Centre. After the A322 junction move to the right-hand Lane

Use the right filter lane ahead for Guildford College (and Lido); Turn right onto the A320 signposted for Guildford College.

The first mini-roundabout is for Exhibitors access; Exhibitors loading unloading and parking only. The Show Visitors (Students) Car Park is left at the second mini-roundabout

By Car: M25 J10

M25 J10 is for the A3 signposted for Guildford; Take the signpost Guildford Exit from the A3.

Descend the slip road on the left side; turn left onto the major road aiming for the (straight on) A320 lanes. The right hand lanes are to Guildford Centre via A322.

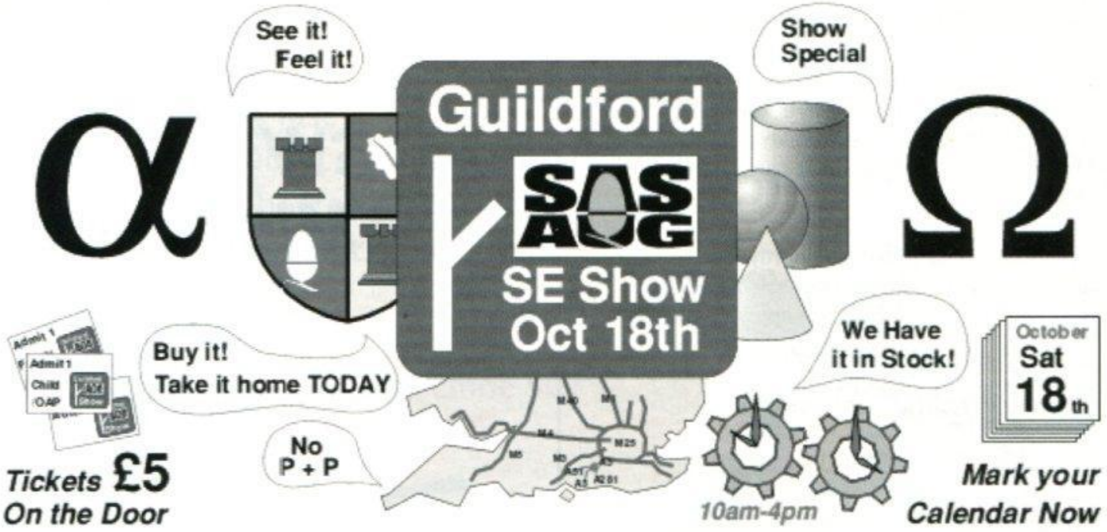
Straight on at the traffic light-controlled junction; Guildford College is just ahead.

The first mini-roundabout is for Exhibitors access; Exhibitors loading unloading and parking only. The Show Visitors (Students) Car Park is left at the second mini-roundabout

Surrey and Sussex Acorn User Group

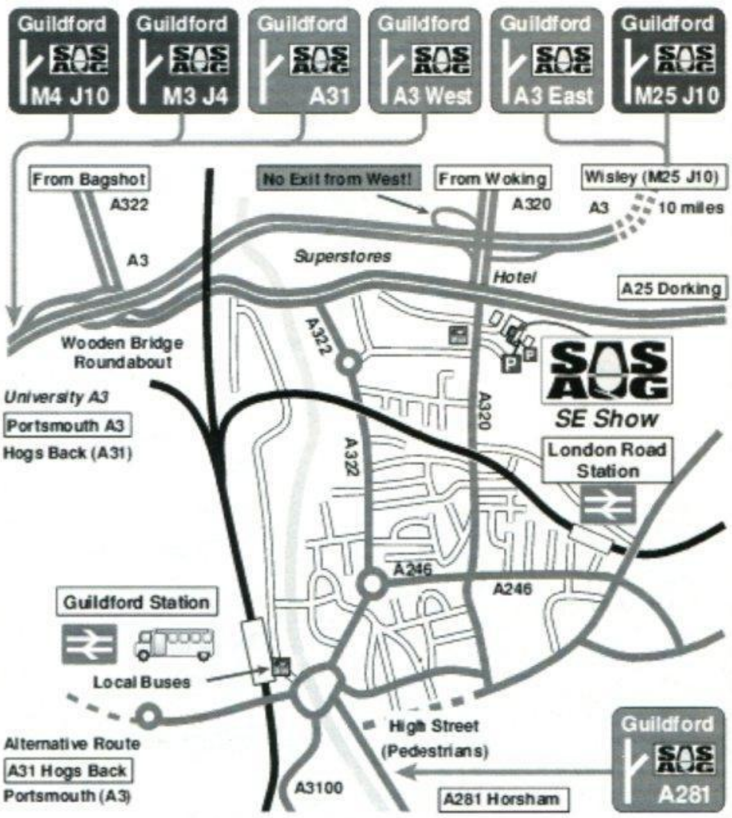
proudly presents

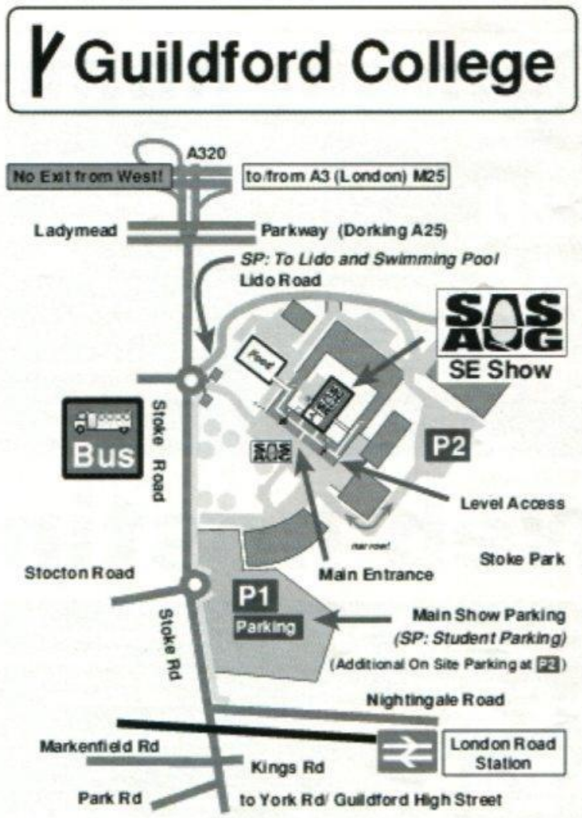
Website Theatre & Technical Support *by* Fillin



The Risc OS South East Show

10.00 - 16.00 Saturday October 18th 2003





Further Details: `http://www.fillin.co.uk/seshow`

Virgin Cross Country | SWT Thames | Guildford Station | or Local | London Road Station | Heathrow Gatwick

SASAUG meets in Horsham on the 2nd Monday of each month

Guildford — Routes on Website

Making money

Record levels of consumer debt in the UK have been all over the news in recent months. The excesses of Christmas and January are distant memories, but not if you maxed out your credit card online. According to the Internet Media Research Group, an astonishing £1bn was spent online in credit card purchases in January in the UK alone. And they say that January is a slow month for trade. Perhaps people using their credit cards to pay for goods online have a great deal to do with it.

There's no longer any doubt. After the deafening burst of the dot-com bubble, the industry has started growing steadily from a more sensible level. Amazon is making a profit. Even Lastminute.com is doing respectably, it made £1.6m gross last quarter. And if the Internet is as democratic as it is feted to be, why shouldn't you be getting a slice of that pie?

From football clubs selling shorts to farmer's wives selling lingerie, it seems everybody has an online shop. Setting up your own store from scratch requires risk, time and investment but can be quite satisfying and, if you do it right, lucrative. The process is not dissimilar to running your own mail-order service. For the uninitiated however, it can be a mini-minefield, and the whole thing, if you're canny about it, is likely to cost around £1500 to set up.

Let's assume that you have your shop already running on a server, waiting to have a payment processing mechanism added. The services on offer vary widely, from ones that provide you with a full shopping cart and form mechanism to ones that simply process credit card numbers. Requirements vary drastically.

How to get paid

All the work and imagination you lavish on your shiny virtual store will come to nothing if you don't make it easy for people to lob cash at you. The most important aspect of shopping online is being able to take payments for impulse purchases, and being able to do it as smoothly as possible; these days no internet shopper can be bothered to fax a cheque or put a stamp on an envelope. You can either accept payment through a holding account, or directly through a Payment Service Provider and an Internet Merchant Service.

PayPal and WorldPay are the best known of the Holding Accounts taking payments on your behalf. Many people accept donations to keep their site running through PayPal and it is the payment method of choice for eBay. In fact eBay became so dependent on PayPal, it decided to buy it.

PayPal is not just for amateur auctioneers though, as it operates special business and merchant services. You are supplied with a secure shopping cart, a shipping calculator/tracker and the ability to customise everything about your account. They even supply you with GIFs of credit card symbols. It charges 50p for handling each UK-based withdrawal, and a 2.7% commission is levied on business customers. Everything at the bottom level, however, is dealt with in dollars, and so there may exchange rate charges to consider too.

The advantages of PayPal are that a great number of people already own accounts, and therefore won't be put off by having to jump through hoops to give you money. Plus, you won't need to worry about the fiddly setting up of your own secure servers and merchant bank accounts (more on that later.)

The disadvantage is that you can't help getting the feeling that you're paying over the odds for the service because you live on the wrong side of the Atlantic. Plus, because so many people also use PayPal as a virtual begging bowl for passers-by to drop coins into, you risk giving your site an unprofessional appearance.

If you like the idea of PayPal, but you are somewhat unsure about using a US-based company, you might like to consider a good UK equivalent: NoChex. It was set up to offer a straightforward way for people in the UK to process payment, and is similar to PayPal in that it acts like a bank account that others can transfer money into. It's cheaper than PayPal too, it charges 1% commission or a minimum of 99p each time you take money out of your account. They are at pains to point out that they only charge when you withdraw money, rather than each time you receive a payment. But surely if we're talking more than ten pounds, it works out the same?

There are requirements for NoChex: Both you and your customers must have debit cards registered with a UK bank to open an account; this makes it difficult for non-UK shoppers. You can only have a maximum of £90 in the account, and they do not accept liability for commercial transactions; only personal ones. They may consider upgrading your account and negotiating your terms and conditions if asked, though.

Since you want to be sure that your customers can pay you without too much trouble, if you do go down the route of using holding accounts, it might be wise to operate several.

Acquiring Banks

The second, and more professional way of doing it, is to open up an appropriate bank account, called an Acquiring Bank, and obtain a PDQ and merchant services.

What are all those things? Imagine your Web site is a real-life shop. The Acquiring Bank is your cash register and the merchant services are the smiling cashiers eagerly considering lunch. A PDQ is the mechanism that actually takes the card, swipes it and sends it for authorisation. Everything that takes a card, from the old machines that imprinted your number onto carbon to automatic train ticket machines, is a PDQ and unless you fancy sitting in front of your computer waiting for card numbers to come through so you can type them in, you're going to need to hire one. PDQs on the Internet are called Payment Service Providers, and they should do the job nicely.

Some examples can be found on **www.electronic-payments.co.uk/product_data.jsp**, NetBanx (**www.netbanx.com**) is a good inclusive service for people just starting up. It's a bureau, which means it's all inclusive but bureaux take a while to transfer money to your account. WorldPay (**www.worldpay.com/uk/**) offers an international outlook, if you already have an Acquiring Bank. Each PDQ offers different combinations of services, and advice on how to fit all the jigsaw pieces together.

Crucially, if your customers have any

how is your business?

QCC is a commercial consultancy that adds value to your business by;

- Helping you get Investment
- Improving your infrastructure
- Arresting decline and turning businesses around without taking away your control

1. Start Up or Growth.

You may require finance. The fundamental truth is that investment brokers will not normally look twice at any proposal they receive. Therefore your business plans must be fully developed so that they can stand up to the most severe scrutiny and enable you to obtain the finance you need.

Our Service.

We work closely with Investment Brokers and Banks. We fully understand their needs and ensure that your business plan complies. More importantly we guarantee that the plan will truly reflect your business and will flush out any major stumbling blocks that you are going to encounter before you run into them.

2. Suffering from growing pains?

When an organisation grows quickly it often creates an imbalance between product volumes and the administration required to deliver them. The truth of this situation is that sales will suffer if you don't put the administration in place, but net profits will suffer if it is done wastefully.

Our Service.

With your help, we implement an organisation structure which guarantees that all your resources are 100% aligned to deliver your Valuable Final Product. This puts you back in control, it highlights where your administrative gaps are and how to fill them, and even gives you an understanding of which roles you need to fill first as your organisation grows.

3. Do you know why performance is declining?

The truth is that the answer is always simple and can always be fixed, and to fix it at this stage before the situation gets worse means that you can hang on to control of your company.

If you wait too long, you may not.

Our Service.

We operate a straightforward, understandable set of steps which result in a fully recovered business which wastes no resource, knows exactly why it went into decline and knows how to avoid any future decline and to grow successfully.

QUEST COMMERCIAL CONSULTANTS

Birmingham
215 Gristhorpe Road Selly Oak Birmingham B29 7SP
Tel: 0121 472 0684

Manchester
28a Middle Hillgate Stockport Cheshire SK1 3AY
Tel: 0161 429 8902 Fax: 0161 429 0685
e-mail: nickb@questdp.co.uk

32bit Iyonix-compatible upgrades now available - please phone!

All products are compatible with StrongARM and RISC OS 4
Some products are enhanced for RISC OS 4
All prices include VAT and UK carriage (where applicable)

HERE IS THE NEWS...

22 Robert Moffat, High Legh, Knutsford, Cheshire WA16 6PS • Tel 01925 755043 • Fax 01925 757377 • http://www.rcomp.co.uk/

R-Comp

rcomp@rcomp.co.uk

Please note - All prices include VAT and UK carriage

Data Power 2

We have taken over development of the leading DTP-style, relational, RISC OS database - DataPower 2. An extended CD release has been produced (removing the old credit-based protection system) and a brand new 32bit version. The CD includes the latest release, plus an online manual in various formats, as well as tutorial and "Using DataPower 2" materials.

DataPower 2 CD version £99
DataPower 2 CD + printed manual . . . £125

Upgrade to CD for existing DP2 user . . £25
32bit upgrade for existing v2 owners . . £40

Image Outliner (26/32bit) £17.50

Web Authoring

HTMLEdit 5 Studio (Whole Suite) . . . £115
HTMLEdit Studio contains:
HTMLEdit V5 . . . . £55
WebsterXL £30
Web Designer's Toolkit v2+ £30
WebSpell (HTML-aware spelling checker) **£15**

Also Available:
SiteMaster 2+ £35

Internet Utilities

R-Comp Internet Suite £75
First class software to get you online!
Consists of DialUp 2, Messenger Pro 2 & WebsterXL (described below).
Available with a 56k Modem and Account for £115.

DialUp v2 **£25**
Internet connection software
NB. £20 to MPro owners, or £15 if you own WXL

Upgrade from DialUp v 1 for **£12**

Messenger Pro 2 **£37**
- Easy to set up and use,
- Flexible view options
- Offline and Network (£45) and Server (£100)

WebsterXL **£30**
- Support for advanced Web technologies
- Support for frames, tables, CSS and JavaScript
- Includes 128-bit SSL —shop with confidence!
- Uses plug-ins to support Java, Flash etc.

Grapevine
The definitive Internet chat software to communicate via MSN and IRC!
£25

22 Robert Moffat, High Legh, Knutsford, Cheshire WA16 6PS • Tel 01925 755043 • Fax 01925 757377 • http://www.rcomp.co.uk/

Interactive R-Comp

rci@rcomp.co.uk

Network-in-a-Box

New Product!

Network-in-a-Box gives you all you need to network up RISC OS and Windows computers, and share printers/internet. Containing 2 network cards, cables, the Internet/Print sharing box, software and ***5 printed, step-by-step manuals*** covering both RISC OS and Windows. **£260**

ADSL-in-a-Box

New Product!

Similar to above, but for ADSL and without the shared printing. Everything you need to network a RISC PC/A7000 and Windows PC for ADSL **£230**

UniPrint NEW - out now!

"Universal" Network Printer Driver . . . £40
The software allows your RISC OS machine to print to any printer connected (and working) to a WindowsPC on your network. That £50 USB inkjet or expensive **Photo** Printer? No problem. UniPrint solves your RISC OS printing problems.

UP VAcorn/PCcard & UP Deluxe . . £25/£50
The Virtual Acorn version allows VA to print (and the Alpha portable), and allows printing via PC card. "Deluxe" includes both standard UniPrint and the VA version, plus Sprite printing.

More Cable broadband and ADSL kits available at new lower prices!
http://www.rcomp.co.uk/

100Mbit Network Card

High speed 10 and 100Mbit card £89

TEK
THE REALTIME STRATEGY GAME
£30
TEK is available now!

sense, they will not give their credit card details out on an insecure medium. (For some reason, this little detail doesn't seem to apply to those "charity muggers" taking down people's credit card details on their clipboards in the middle of the street.) Aim for a PDQ system that offers secure (SSL, SET or PKI) collection of credit card details as standard. Most should; for instance, Secure Trading (**www.securetrading.com**) will provide you with a good one.

Fraud

This leads us nicely onto how to protect yourself from credit card fraud. "Customer Not Present" transactions, as the banks term them, are sadly open to abuse. Some companies have been known to be alarmingly dim when it comes to this.

About four years ago, a mobile phone company (which shall remain unnamed) got into trouble for letting customers key a credit card number into its pay-as-you-go service without any identification information whatsoever; not even an expiry date. Although the chances of anybody striking lucky with a random 16-digit number are low, it's best to avoid being so wildly incompetent and provide your customers with a secure server and proper authorisation.

If the worst happens and a fraudulent transaction is made over your Web site, the courses of action vary widely depending upon your Acquiring Bank and Payment Service Provider. Bureaux, those that combine the payment processing and the merchant service, are safest by far since everything is centralised. However, because they have more to lose, they are likely to hold all payments back for up to sixty days until they are sure that the transaction is legitimate. This could create problems with cashflow if your site is new.

If you don't have the protection of using a bureau, you might find yourself out of pocket, if only for a short while. A claim will be made by your Acquiring Bank to recover the money. Depending on your terms and conditions, you may have to reach into your trousers to reimburse your bank and either claim it from your own insurance or from your Payment Service Provider.

Your Acquiring Bank, when giving you your Internet merchant service account, will also make a judgement as to the likelihood of fraud on your site and arrange charges and precautions as appropriate. Sites selling, for instance, concert tickets or DVDs might be more likely to become victims of fraud than sites selling soft furnishings. There isn't much of a black market in curtains.

The process is fairly similar if you have to refund any of your customers. You must put in a refund request, and your Internet merchant account will be debited the amount that is refunded to your ex-customer's credit card plus an administration fee, which is usually around 2.5%. Luckily, if you concentrate on keeping your customers happy and well informed, that shouldn't be a problem. In Web commerce especially, customer service pays dividends.

Golden rules

Unsurprisingly, not all online shops are successful. Those that are remain so because of their reputation, built through word of mouth, that they are trustworthy, fast and easy to use. Some online shops, however, appear to even forget that they are trying to serve their customers. Here are some important rules if you don't want your dot-com to make you spontaneously dot-combust:

Keep the design straightforward and intuitive. Ideally you want the customer to be able to view and then buy something within as few clicks as possible, although do put in a warning screen before you charge their card.

Things won't always go right. If they don't, talk to your customers and answer their questions. They may be typing into a machine, but there needs to be a human face behind the screen. Answer any e-mail questions or complaints you receive promptly, not five days later. Consider supplying a telephone number too.

Watch what you do with your customers' details. It's fine putting them on a mailing list if they agree to it first. Target it. If your customer has bought Iron Maiden T-Shirts it's no good trying to flog them a biography of Tammy Wynette.

Furthermore if they give you their addresses for e-mailed order confirmations, and suddenly they get daily offers to buy things only vaguely related to what they purchased, your company's reputation will be besmirched by the nasty pink stain of spam. Which is not a good thing!

Marketing

Mailing lists are one tried-and-tested way of keeping your customers informed. But how do you attract new ones? If you don't have dodgy triangular pills or secrets that increase the size of various parts of your body to sell, then consider these options:

No matter how strange or unusual your product is, chances are somebody will buy it. Just look at e-Bay. You have to find the people most likely to buy your product, and advertise accordingly; again, advertising bluegrass CDs on a Metallica Web site is likely to get you precisely nowhere.

Banner advertising and pop-ups are increasingly maligned. Many users simply press Close the moment a pop-up shaped window appears, and there is plenty of software available that blocks them. There are two areas where advertising seems to be working. Firstly text adverts, through Google in particular. Google will only show your advert if the user has been searching for keywords relevant to your site. Furthermore, Google syndicates its adverts to several other sites.

Secondly, Dynamic HTML layers are the new pop-up windows, and they play your advert over the top of another Web page. Pop-up blockers are unable to stop them. You do have the chance of being really creative with the animation and the ideas, but there is a backlash starting to build over their increasingly perceived overuse. Think long and hard before you do this kind of marketing, lest you become as great an irritant as those relentless mini-camera adverts from about a year ago.

As with any business the key of being successful is identifying a need and supplying it well. The internet gives a great opportunity for anybody to become an entrepreneur, and with luck you can be successful too.

Quin Parker
quin.parker@acornuser.com

ECDL, in particular

Following on from the last issue we will continue our detailed look at how applicable the ECDL is to the RISC OS platform. As we have a number of modules to examine we will be moving a little faster than in the previous issue.

We are continuing with module 2 which gets into file management. There are definite Windows connotations in implying that the operating system holds devices as part of the file hierarchy. Perhaps it does on RISC OS but not so as you'd notice as a user.

You also need to know how to find files in a variety of ways, which is fine; recognise file types, count files, and count specific filetypes, which is a bit harder.

Then again there's the bit on keeping file extensions when renaming files. That's a definite oops as far as RISC OS and Mac OS go. There are various other operations like locking and unlocking files, sorting by name, type, date and so on, renaming, copying and moving files and folders. All standard stuff.

Then there's the importance of backups, putting files in the waste bin and restoring from there. Oh well.

There are lots of these things that could be done with the addition of PD software like Blackhole and Director, but they aren't standard. Then there's a section on file compression.

Unsurprisingly there's a whole section on viruses which is translatable to RISC OS even if we don't really have much of a problem. Finally there's a sub-section on printing and printer drivers which is also applicable.

Word Processing

This module requires you to demonstrate the ability to use a word processing application on a computer. You need to be able to accomplish everyday tasks associated with creating, formatting and finishing small sized word processing documents ready for distribution.

You should be able to duplicate and move text within and between documents, and demonstrate competence in using some of the features associated with word processing applications such as creating standard tables, using pictures and images within a document, and using mail merge tools.

So you need to be able to load, save and create documents and save as another filetype. Not a problem.

Then there are the skills to zoom in on the document, display or hide toolbars, change the document or application options

Edit, enter, delete text, move it around, move it between documents, use the undo/redo options (hmm, perhaps if we use TextEase for best results here). Use search and replace; apply text formatting; superscript and subscript; change case, colours; use automatic hyphenation; apply styles to words, lines and paragraphs. Show and hide the hidden characters: things like paragraph breaks, soft returns, even spaces.

Then it gets a bit hard and Word specific. For example, no RISC OS word processor uses the typewriter concepts of single and double-line spacing as simple options. But if we pass by that there's plenty of other things that do match up: space above and below paragraphs, tabs, indenting of various types. Creating bullet lists and then borders.

Change the document size and formatting; insert and delete page breaks, put in headers and footers, page numbering and so on.

One problem we then get to is tables and manipulating them. Not a problem if we use Icon Technology's Easi- or TechWriter but no good if you're using Impression or Ovation Pro. After tables you have to do things to pictures of one sort or another.

Finally there's mail-merging. For which the problems are many and varied. I'm not going to claim the syllabus is Windows-specific here, but the options for mail-merging on RISC OS are limited.

Then the ECDL goes off on something of a tangent, in my opinion, and goes into proofing and spell checking. However we now have print previewing, a completely unnecessary action on RISC OS because what you see is what you get, unlike in Word.

Spreadsheets

This module requires you to understand the concept of spreadsheets and to demonstrate the ability to use a spreadsheet application. You need to understand and be able to accomplish tasks associated with developing, formatting, modifying and using a spreadsheet of limited scope ready for distribution.

You also need to be able to generate and apply standard mathematical and logical formulas using standard formulas and functions. You also have to demonstrate competence in creating and formatting graphs/charts.

You have the usual open, close, new and save as a different file type basic skills as well as zoom in and hide/display toolbars. RISC OS is certainly weak in this area but the basics will work.

So: Freeze, unfreeze row and/or column titles; change the basic options/preferences in the application. You then have basic skills of entering numbers and text into cells, editing and deleting it. Selecting a cell or a group of cells; I don't think any RISC OS spreadsheet allows the selection of non-adjacent cells.

Insert and delete rows and columns, change heights and widths; use the undo/redo command (oops). Copy and paste cells (single and multiple); use the replicate function in a variety of ways.

Then there's distinction between a spreadsheet and a worksheet, which really doesn't apply outside of a specific spreadsheet, although most RISC OS spreadsheets applications can handle multiple sheets. Just not necessarily as a single concept.

On a more detailed level you have to be able to understand how to handle arithmetic values in a cell, how cell referencing works with absolute, relative and mixed references.

Working with standard functions such as Sum, Max, Min and ... count (count?); and logical functions.

You have to understand how to format the data output in the cell, plus how they appear in terms of fonts, font sizes and so on.

Charts are another issue: Most of the RISC OS spreadsheets will do charts in a variety of formats. You have to be able to create those graphs and change how they appear in terms of colour.

Finally it moves in a very similar way into printing, previewing, most of which is applicable, some of which isn't.

Databases

In this module you need to understand some of the main concepts of databases and demonstrate the ability to use a database on a computer. You have to be able to create and modify tables, queries, forms and reports, and prepare outputs ready for distribution.

You should be able to relate tables and to retrieve and manipulate information from a database by using query and sort tools available in the package.

As usual we start with the theory, you have to understand how a database is organised. I have a personal problem with "tables" as a fundamental concept in databases, as it's just a way of representing them rather than being a fundamental principle. But that's me.

You have to understand about fields, field types and, apparently, field properties. Understand about keys, indexes and the "purpose of relating tables" in a database plus understand the importance of setting rules to ensure relationships between tables are valid. The ECDL does use the relational database as its model which again I find surprising as it is not an easy concept. There is no reference to flat files at all. So you have to be able to create tables, add and delete records from a table; alter, add and delete data in a record. Use the undo command, this is a bit of a giveaway: If Access doesn't have "redo" you obviously can't have it as part of the ECDL.

Delete, save or close a table. Define keys, index on a field (without duplicates). Change a field format; and understand what it means to change field attributes.

Then there's adding validation rules for a field and other table-related operations which you might be able to use in Datapower 2.
As we're looking at relational databases you have to be able create one-to-one and one-to-many relation ships between tables, also remove a relationship.

Other areas on databases that are covered in detail are forms, filtering, queries, sorting and finally, reports and printing.

Presentation

In this module you are required to demonstrate competence in using presentation tools on a computer. You should be able to accomplish tasks such as creating, formatting, modifying and preparing presentations using different slide layouts for display and printed distribution.

You need to be able to duplicate and move text, pictures, images and charts within the presentation and between presentations. You must shall demonstrate the ability to accomplish common operations with images, charts and drawn objects and to use various slide show effects.

The main difficulty here is that while there are (currently) two main presentation packages NoticeBoard Pro and OHP2. NBPro, for one, uses a radically different method of creating presentations than any Windows package.

Anyway you need to know the basics of creation and saving of a presentation. Plus saving it as a different file format. Which is an interesting idea. In NBPro all the files are already in a different form (draw or Artworks files), in OHP2 they can be saved as JPEGs.

Someone's been using their copy/paste facility because apparently you have to be able to zoom in and hide/display toolbars as well. Change default application preferences.

As individual slides go you need to be able to create, edit and delete slides but you have to be able to apply a certain format (clearly written for a Microsoft application).

You need to be able to change layout, colours. Use templates (hmm). Much of the individual operations are inapplicable in one sense, but all of them can be done in one way or another with each application.
There is a sub-section on graphs and editing those, and another section on editing organisation charts. The only possible reason that that would be there is because there is a Microsoft application that does that job.

What's missing? There's nothing on image editing applications and nothing on vector graphics applications.

Image editing is something a lot of people do, especially with all the cameras that get given away with computers. And why not vector graphics (but an organisation editor?) simple because Microsoft don't sell one. Ridiculous.

Information and Communication

This final module is divided into Information, which is about some of the concepts and terms associated with using the Internet, and to appreciate some of the security considerations. Also manage common Web search tasks using a Web browsing application and available search engine tools.

In the second section, Communication, you need to understand some of the concepts of electronic mail (e-mail), together with having an appreciation of some of the security considerations associated with using e-mail. And demonstrate the ability to use e-mail software to send and receive messages, and to attach files to mail messages.

So you need to understand the difference between the Internet and the World Wide Web (WWW); what terms like HTTP, URL, hyperlink, ISP and FTP mean. Understand the make-up and structure of a Web address and what a Web Browser is and what it is used for.

Know what a Search Engine is and what it is used for plus understand cookie and cache. Have an idea about what a protected Web site is, (use of username and password); Know what a digital certificate is; what encryption is and why it is used.

Security in terms of the danger of infecting the computer with a virus from a downloaded file and of being subject to fraud when using a credit card on the Internet. What is a firewall?

Then there's a whole section on basic Web browser operation including the old

favourite hide/displaying toolbars. Using the history features, navigating between web pages, using a web form and bookmarking a page. As well as managing your bookmarks.

Using a search engine, how to get better results after an initial search, saving a page downloading different types of file from the web on to a page. Then the usual selection of printing a web page.

For e-mail you have to understand the make-up of an e-mail address; the advantages of e-mail in terms of speed, cost and flexibility. And you're supposed to understand Netiquette! That alone makes this worthwhile.

For security; understand you might get unsolicited e-mail (but no hint of why you might). How you can infect your computer by opening a mail message you don't recognise or an attachment on one. You need to know what a digital signature is.

The next part deals with handling your e-mails from opening and reading them to being able to put them into other folders, using rules. Adding and deleting mails and so on.

Plus that favourite: hiding and displaying toolbars.

I am not going to go into anymore detail on the e-mail, suffice to say that pretty much everything here is easily performed by RISC OS e-mail readers, in fact they do an awful lot more than Microsoft ones. What's been omitted is newsgroups.

All in all the ECDL is a very good thing, it certainly should make PC users aware of what they are supposed to be doing. The fact is that most of it is applicable to RISC OS as well.

There has been a strong attempt to remove the Microsoft-centricity out of it, but it's difficult for someone who knows of nothing else to conceive of an existence without Windows. Perhaps the ECDL creators should consult with people outside that market for the next version and make it a universal product.

Steve Turnbull
Steve.Turnbull@acornuser.com

Free Adverts

•Available at no cost, Greater Mancheter, A3000 monitor, dot matrix printer and steel stand. Call Peter on 01706 646769 after 6pm.

•RISC Palmtop, 8mb Machine hardly used with manual. £39 + P&P, Telephone 020 8318 5155 (Ask for Frank)

•RISC600, Original Box, All manuals, Easiwriter Professional, Draw Extra Turbo, Lemmings and some Clipart installed. Plus loads of fonts. reasonable offers. 07786 802256

•Acorn items for sale:
[1] Single slice Risc PC. ARM610; 6MB RAM; 1MB VRAM; 420MB HD; Cumana CD-ROM; RISC OS 3.50. Original mouse, keyboard, manuals and boxes.

(2) Two slice Risc PC. StrongARM SA-110; 64MB RAM; 2MB VRAM; 2GB HD; 24-speed CD-ROM; RISC OS 3.70. Original Mouse, keyboard, manuals and boxes.

(3) Psion Series 3c PDA. 2MB RAM; Mains adaptor; Leather Case; PsiRisc Acorn link software. All original boxes and manuals.

(4) Cumana SCSI2 Podule.

(5) CJE 5x86 PC second processor card for RiscPC. 133MHz, 512k cache. Comes with PCPro software.

(6) Computer Concepts LaserDirect4 laser printer plus podule. All software and original manuals.

(7) Epson GT9000 A4 flatbed SCSI scanner. Original boxes and manuals.

(8) Software (all boxed with manuals and bits): Artworks; Eureka v3; Ovation Pro; Impression 2; Fireworkz Pro; Mr Clippy; ImageFS 2; SparkFS; Keystroke; PCSound Professional; Win95FS; WMF IT; Clip IT; ImageMaster; ANT Internet Suite 2; Compression; ArcFax; Virtualise; Font Directory 2; Touch Type; PublishArt; PublishArt 2. Any reasonable offers for all items (or combination of items) above. P&P charged at cost or available to collect.
Contact Jon Aylwin 029 2041 0678 or jon@aylwin.org.uk

• Two Master 128s, 3 disc drives, 1 Cub Monitor, 2 mice, software, £50 buyer collects. East Kent Coast. Phone 01303 87364.

• Eagle M2 multimedia card; replay video production, HQ video stills, digital stereo sound sampler, full MIDI IN/OUT/THRU facilities, RISCPC compatible. Offers around £160. Multimedia software; Midiworks, Prosound, Cineworks (includes AppleFS) and Genesis Professional £35 each plus postage or £120 for all three. Eagle M2 plus all four packages £250 plus postage. Enquires or offers 0151 547 3993 or email aokai@tiscali.co.uk

• A two foot stack of Acorn User magazines for sale, complete with cover discs, from Sept 1994 to end 2001. Also other Acorn magazines and discs. Best offer secures this 12kg pile. Tel. Coventry, 02476 319519

• Wanted: All Acorn A3000s, A3010s, A3020s, A4000s, A5000s, A4s, Risc PC 600 & 700s, StrongARM Risc PC's, Kinetic Risc PCs. Anything considered. Can travel. 07930 507815 or 07775 776217.

• Acorn A5000 including monitor etc plus additional software including Advance suite. Any sensible offer considered. Contact Robert on 0191 5191231 or at robertvardill@beeb.net

Acorn User Free Ads Service

Your name:..Your phone number:....................................

Why not take advantage of our free reader ad service? Fill in your details on this coupon (24 words maximum, one word per box below) and send it to Free Ads, Acorn User, 28a Middle Hillgate, Stockport SK1 3AY or by e-mail to: aufreeads@acornuser.com. Only one ad per reader please, private sales or wanted only.

Although we try to publish every ad we receive, we can make no guarantees; publication is entirely dependent on space and time constraints.

Please fill in your name and telephone number below – these will not be published but enable us to contact you in case of any queries. Make sure you include your own town/county in your ad to help potential buyers with their purchasing decision.

Passing notes

Text messaging has been slower to catch on in the US than in the UK, but we all knew they'd catch up finally. So much so that some Bay State school administrators are calling it a high-tech headache, a 21st century form of passing notes in class which will lead to cheating during exams.

Many schools banned cellphones a decade ago, when they started catching on with kids. But in the wake of the September 11 terrorist attacks, with jittery and busy parents wanting to stay in touch with their children, many schools eased rules and allowed cellphones as long as they were not used during school hours.

Keeping tabs on the kids

Every child in England is going to be given a unique identifying number attached to an electronic file of personal information about their lives, under plans announced to avoid a repetition of the murder of Victoria Climbie.

The eight-year-old from the Ivory Coast died in London in 2000 after months of torture and malnutrition. The proposal came as part of a wide-ranging package of reforms, including plans to appoint an independent children's commissioner to champion their rights.

To tighten the child protection net, a sophisticated tracking system to keep tabs on England's 11 million children has been proposed. In 150 local authorities, where education and children's social services are to be merged into new children's departments, there will be a "local information hub" recording details of all the children living in the area.

Government will consult on whether information could be included in files without consent of the child or carers and whether it could include "warning signs" within the family such as imprisonment, domestic violence, or mental health problems. The Green Paper proposes early legislation to remove legal and technical barriers to information sharing, allowing children to be tracked around the country when families move.

The civil liberties campaign group Liberty warned that such a national database could put people falsely accused of child abuse at risk of threats and blackmail if the information was not secure.

Safe and sound

Safety has always been an important issue for schools, but today it seems even more so. Although technology is not the cure to all ills, it can work with other systems to enhance access security and improve communication. However, the most significant advances in school security technology are in the field of biometrics, the process of positive identification through the scanning of unique body characteristics such as fingerprints, eyes, facial features or voice patterns.

The School District of Philadelphia has already begun to use finger scanning to track the work hours of some of its employees. In addition a small number of American educational institutions have begun using biometric identification systems for student cafeteria purchases.

Another increasingly common application is the use of low-end biometric identification systems to authenticate users on educational networks in place of the traditional use of passwords. This involves using relatively inexpensive peripheral fingerprint readers that connect to existing computers, or finding one of the few manufacturers that have started integrating such readers into their products. In the UK, school libraries also use this system.

Still, the greatest potential for biometrics in enhancing the school environment is in providing access control, positive identification and a record of those entering and leaving school buildings. Biometric technology has matured considerably in the last five years, with accuracy rates going up and costs coming down. Iris-recognition systems may have the highest reliability rate - with some manufacturers claiming accuracy in excess of 99 per cent.

Build me a Windowful school

Extending its reach in education, Microsoft have announced that it will help design a new $46-million public high school in Philadelphia with embedded computer technology everywhere from classrooms and administrative offices to the desk of the football coach. *(Insert own joke or wisecrack - Ed)*

The school is still in the earliest stages of planning and won't open until 2006, but administrators said they envision a paperless building (*and we've heard that one before*) where students study in online textbooks, teachers quiz their classes on laptops and automated systems order cafeteria supplies as they are depleted. Details of how the district's partnership with Microsoft will work are still being negotiated, but a few ground rules already in place will limit the company's involvement.

Philadelphia won't be required to buy Microsoft products; technology will be selected through an open bidding process. The software giant won't be involved in teaching classes or managing the school once it opens. The company also isn't planning any major donations of equipment or cash, officials said. The school district will pick up the entire $46-million cost of the school.

Instead of free hardware and software, Microsoft's main contribution to the project will be expertise, said the company's executive director of learning technologies, Wanda Miles.

The company plans to hire a project manager who will lead a committee in developing curriculum, implementing administrative systems, designing teacher training programs and advising school officials on how technology can best help students learn.

So what's in it for Microsoft? It has been working hard to deepen its share of the market for educational tools, an area where it has long lagged behind rivals like Apple in the US and such a project gives Microsoft a chance to promote its systems, build brand loyalty among young students, and use the school as a laboratory for future development of educational products.

Pam Turnbull
education@acornuser.com

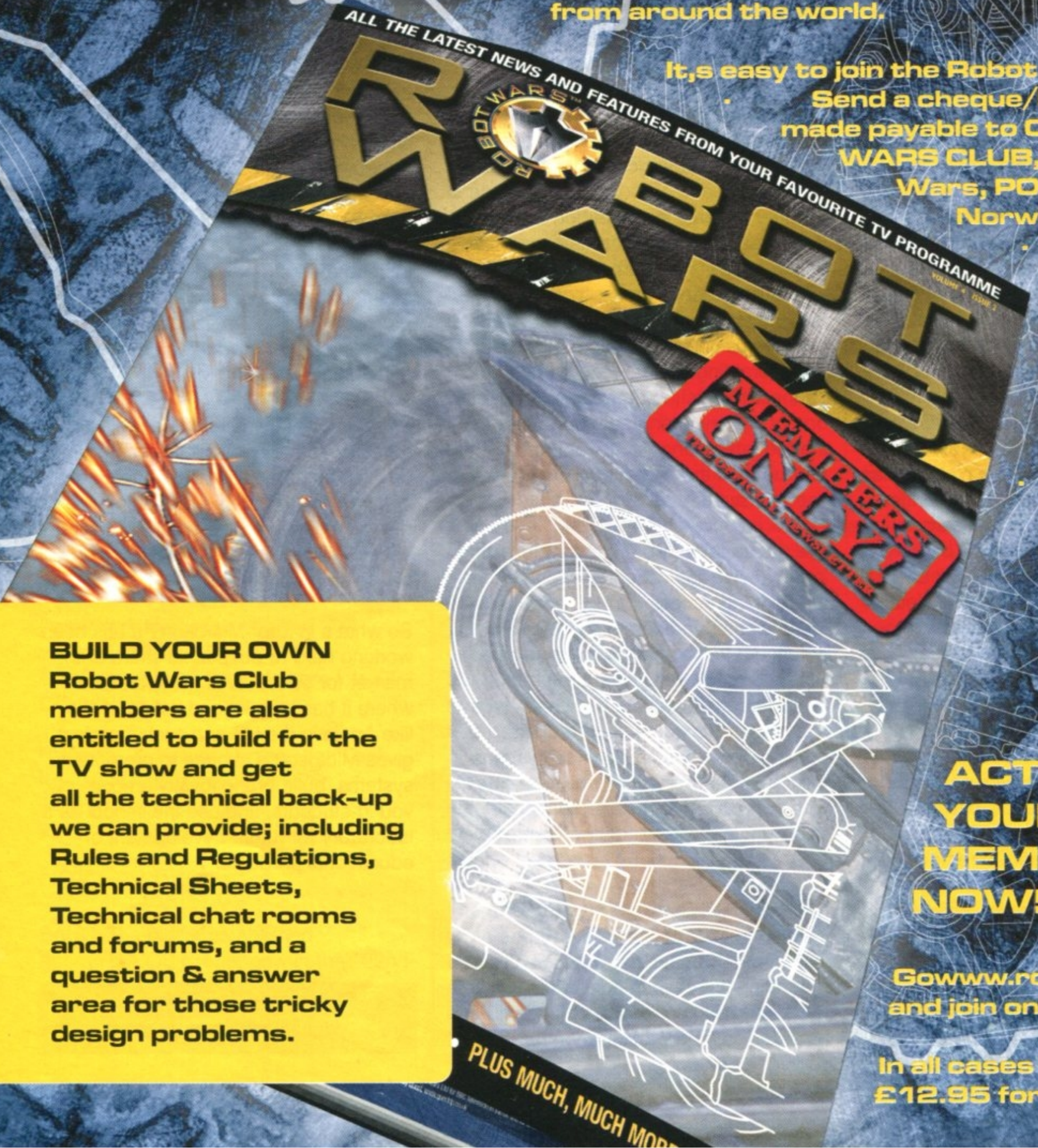
JOIN THE ROBOT WARS CLUB

When you join the Robot Wars Club you receive:

- Your own official membership card and badge
- Exclusive video of never-before-seen Robot Wars footage
- Recent issues of the superb Robot Wars Club Newsletter
- An issue of the official Robot Wars Magazine

As a member of the Robot Wars Club you have following benefits:

- Access to the private Robot Wars forums on the Web
- Huge discounts on all the official Robot Wars merchandise (remote control toys, T-shirts, videos, books, wallets, hats and much more)
- Exclusive quarterly newsletter on everything to do with Robot Wars with articles on Combat Robots, technical breakdowns, interviews, features and robot news from around the world.



It,s easy to join the Robot Wars Club:

- Send a cheque/PO for £12.95 made payable to ŒROBOT WARS CLUB, to: Robot Wars, PO Box 800, Norwich NR6 5DD
- Call 01603 268 025 and pay by Credit Card or by Switch.

BUILD YOUR OWN
Robot Wars Club members are also entitled to build for the TV show and get all the technical back-up we can provide; including Rules and Regulations, Technical Sheets, Technical chat rooms and forums, and a question & answer area for those tricky design problems.

ACTIVATE YOUR MEMBERSHIP NOW!

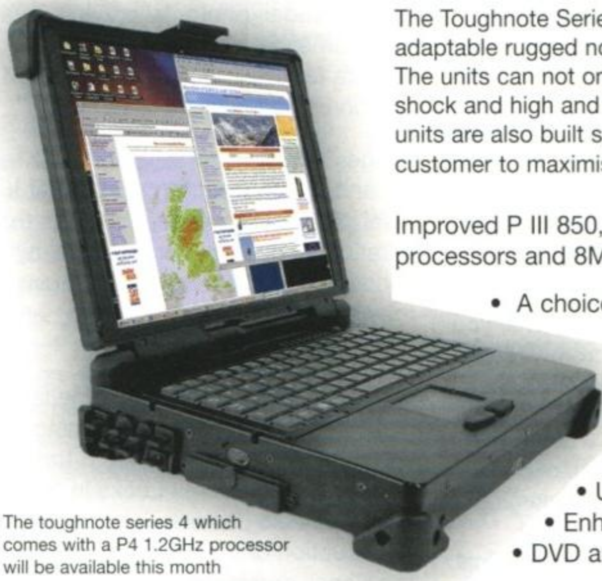
Gowww.robotwars.co.uk and join online

In all cases it is just £12.95 for one year.

FOR COMPUTERS THAT DON'T WANT OFFICE JOBS!



Toughnote 3



The toughnote series 4 which comes with a P4 1.2GHz processor will be available this month

The Toughnote Series is one of the most adaptable rugged notebooks available today. The units can not only withstand rain, dust, shock and high and low temperatures but the units are also built specially for the individual customer to maximise the upgrade possibilities:

Improved P III 850, 900 or NEW 1 GHz processors and 8MB ATI graphics

- A choice of screens inc touchscreen, 13"TFT and highbrightness.
- 128MB RAM now standard - maximum 512MB
- USB port
- Enhanced docking solution
- DVD and CD-RW options

Recon



- Ruggedised Waterproof Handheld PDA

- Windows CE.NET OS
- Intel XScale 200 or 400 MHz processors
- 64 MB high-speed SDRAM
- 64 or 128 MB non-volatile Flash storage
- Sunlight readable 240 x 320 (? VGA) TFT display
- Ruggedised waterproof design
- 15 hours continuous operation from one charge



Visit
www.terralogic.co.uk
For more Ruggerisation

TerraLogic Ltd. Ocean House, 20 Harrowby Street, Cardiff Bay, CF10 5GA, UNITED KINGDOM
Tel: +44 (0)8707 415533 Fax: +44 (0)8707 415534

I can see you ...

Following on from the overview of webcams last month, Pam Turnbull looks at sites with a particularly scientific bent.

Most 'scientific' sites when it comes to web cams are animal-related although there are a significant number looking at the planet, this one, or out into space to find out more about others. The quality of images has really improved over the years as has the potential for interactivity.

Science North

www.sciencenorth.on.ca/learn/webcams

This very attractive Canadian site hosts several webcams, but the Butterfly Gallery is particularly useful in the classroom. Well designed it is more intuitive to use that some of the other webcams out there. It also allows good control over the different cameras you have access to.

So, in addition to having a general overview of people pottering around the enclosure of suitable trees and ferns, you can opt to toggle the zoom from wide to tele or tweak the focus or even change the iris settings.

There are seven cameras in total to explore, the eclosion cabinet, emerging butterflies, current temperature and humidity, two feeding stations and a final camera for flowering plants.

Tim Mousseau's Lab Cam



http://cricket.biol.sc.edu/mousseau-lab-cam.html

Very high quality image of just what it says on the tin, a lab. A live video feed from Tim Mousseau's lab in the Department of Biological Sciences, room CLS 706, University of South Carolina, in Columbia. Look out for Ken, Wade, Jackie, Herrick, Sarah, Ronnie, Jamellah, or any of the large number of visitors that drop by to see them. Do they look like scientists? Are they stereotypical? A good discussion catalyst.

The Panama Canal

www.pancanal.com/eng/photo/camera-java.html

Technically this is an engineering site rather that a scientific one, but it's so good I just couldn't give it a miss. As well as information about the legal foundations of the canal, general information and history, there is a weather radar, photo gallery and data on its commercial services. But the live camera focuses on images from the Miraflores and Gatun Locks.

Images refresh automatically every ten seconds. The best bit must be that if you want you can request a change in the Miraflores Locks camera's angle, by sending an email to **aep-osu@pancanal.com** they say they'll do there best to accommodate all requests.

There is also a slideshow of the last 20 images and of anything interesting such as the USS New Jersey which traveled through the Miraflores Locks in 1999. There are also cameras located near the construction of the second bridge over the Canal, complete with a commentary in Spanish.

PandaCam

www.sandiegozoo.org/pandas/pandacam/index.html

A great opportunity to watch Hua Mei and her mother, Bai Yun at the San Diego Zoo home to the SBS Giant Panda Research Station. Now pandas are not the most lively or quick moving animals, so the site has a time-lapse video option which lets you see the pandas go though their daily routines in a few minutes rather than hours in real-time.

The site holds days of these videos for you to view and compare. In addition, you can freeze any moment and send the image as an e-postcard. Sign up for free and the zoo will also send you panda updates. The site also provides details of Bai Yun's pregnancy and information on pandas.

LeafCutter Ants

http://antcam.nhm.ac.uk/index.html

Housed at the Natural History Museum in London, I was especially interested in viewing this one as I'd visited their Creepy Crawly exhibition in the Summer. This is a pretty site but it takes a longtime to download if you've not got broadband access. The leafcutter ant colony is brought to you courtesy of an infrared camera allowing you to choose from live video or static images (updated every 10 seconds).

To keep you on your toes, ant facts are constantly updated along the bottom of the screen. However, the live video is limited to 10 users and will require broadband access, the Inetcam control panel to at the bottom of the video screen allows you to vary the video quality. There are also links to related sites. The ants are great, but the site makes too many assumptions about its users.

Cloud Forest Alive

www.quetzalcam.org/tour/hcam/

The forest is alive with hummingbirds and as you open the site you are shown what's happening now, 30 minutes ago and an hour ago as well as the option of seeing the last 15 pictures to be taken or the whole archive, here you'll find images of the breeding season and the nestbox cams. The latter can make quite emotional watching with natural predators and over eager hatchlings.

Colibríes is the Spanish name for Hummingbirds and the web cams come to you from Monteverde in Costa Rica so that you can enjoy these beautiful little birds as they come in for a quick drink in the feeder. ColibríCam currently updates every 30 minutes from 5:30am to 5:30pm local time (GMT, 7:00).

They do plan to establish a faster and more reliable Internet connection from the cloud forest to allow more frequent updates. The site also provides a good range of information on the cloud forests

of Central America. The QuetzalCam is aimed at biologists who want to observe the nesting habits of this culturally and ecologically important bird.

JellyCam

http://www.aquarium.org/jellies/jellycam.htm

Here you can observe the Oregon Moon Jelly, Aurelia labiata, but do remember that the lights are turned off at night, so remember the time difference. This is a very well put together site with interactive pages on the anatomy of the jellyfish, its lifecycle and relatives.

Boxes of information accompany the images from the web cam and these come with technical words hyperlinked to glossary and explanatory pages, which makes this a useful Literacy site too for younger pupils. As well as detailed and well drawn diagrams the site is scattered with quotes from the likes of Charles Dickens and Ezra Pound.

South Pole Cam

:www.phys.unsw.edu/au/southpolediaries/webcam.html

Otherwise known as the Automated Astrophysical Site-Testing Observatory this provides live images updated every ten minutes where a quick click will tell you the current South Pole weather conditions. Cold I guess! Located at the US Amundsen-Scott South Pole Station it's just a few 100 metres from the exact geographic South Pole.

Interestingly because the sky and snow can be extremely bright at the South Pole, a neutral density filter is used to attenuate the light. This filter also helps protect the camera, which at certain times of day points directly at the sun.

Shark Cam

http://waquarium.otted.hawaii.edu/coralcam/index.html

The Waikiki Aquarium in Hawaii has a number of fishy cameras for you to investigate but the most fascinating has to be their Shark Cam which refreshes every 10 seconds. Accompanied by information on the 24 species of shark such as the Blacktip Reef Shark there are other predators on show too such as the White Jack. No infra-red here so remember the time delay and 5pm to 5am is the best time for UK access which makes this a difficult site for pupils to access without help.

Bee Cam



www.draperbee.com/webcam/beecam.htm

You can access a short video clip of bees in action or watch as the Bee Cam updates every 15 seconds, I particularly liked the countdown to when the next refresh will occur. While you're waiting there are questions (and answers) to keep you occupied, such as Where is the Queen? There's also advice on setting up your own hive and Bee Cam.

Or you could also pop along to **www.hivetool.com/webcam/index.shtml** where you can see inside a hive with black and white images automatically updating each 30 seconds or opt for a live streaming video view of the LiveHive that lasts up to 60 seconds.

Turtle Cam



www.turtle.ky/video.htm

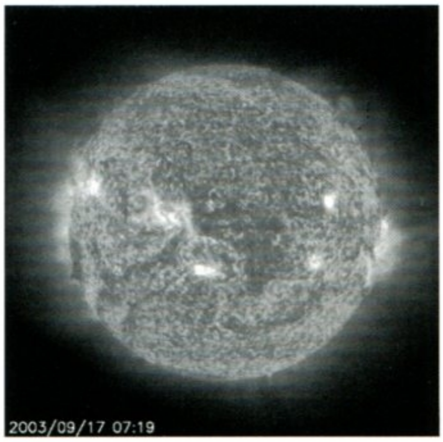
Updated every twenty seconds you can see the turtles in the safety of a Cayman Island Turtle Farm. There are four cams to view as well as information on turtles and related release programs. A good site for discussing conservation and habitat issues using the Green Sea Turtles as a starting point.

Etna Cam

:www.vulcanoetna.it/it.etna.cam.php

An old-fashioned site, which basically shows the volcano. It does display both local time and GMT, but this is best seen during the day unless anything dramatic takes place. Information is available in English and Italian with news, geology, morphology, history as well as folklore of the region.

SOHO Ca



http://sohowww.nascom.nasa.gov/data/realtime-images.html

Beautiful live images of the sun from the Solar and Heliospheric Observatory (SOHO) you can also opt for live video too where the latest 48 hours of data are available as MPEG and animated GIFs.





Pam Turnbull
edu@acornuser.com



Watch your favourite films anywhere!

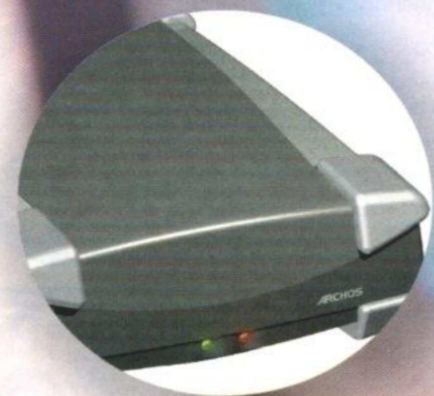


ARCHOS, the specialist in innovative handheld and mobile devices, introduce the world's first Personal Video Recorder and Player.

This is the only true personal video player that can record and play back movies with stereo MP3 audio.

You can also use it to record and store all of your music, and your digital photographs!

The Video Recorder adaptor allows you to easily record directly from any video source - such as a TV, DVD or Camcorder and play back either on the high quality built-in colour display or on any TV or PC in near-DVD-quality.



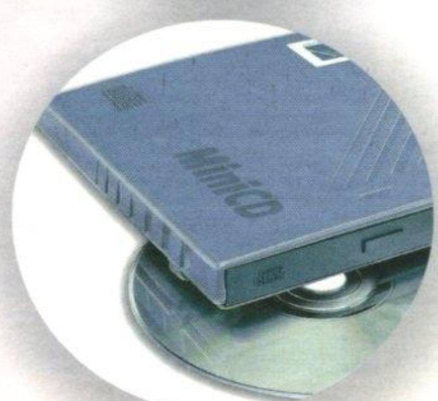
You can store up to 80 hours of video - keep all the episodes of Robot Wars and watch them anytime, wherever you are!

And that's not all - record music from your hi-fi as well, and store up to 500 music CD's - or up to 500,000 jpeg images from your digital camera.

The Archos AV300 series - your Personal Video Player and Recorder - and so much more!







www.archos.com

3 Galileo Park, Mitchell Close, West Portway, Andover Hampshire, SP10 3XQ, UK, T: 01264 366022 F: 01264 366626

advertisers index

Of rabbits and RISC OS

It is a self-evident truth that the average human being likes to get something of value at no cost. This, I would suggest, is the lure of the Internet. But the real mystery of the Web is why so many people are willing to put in enormous efforts to place information, attractively packaged, onto the 'Net for no financial gain.

It really is a wonderland and RISC OS is in there. So, I'll be the white rabbit, and you can be Alice. You need to mutter things like, "How curious", as you follow me down my favourite rabbit hole: **www.drobe.co.uk**

You have landed at Drobe, which claims to be "The Best RISC OS Internet Portal". This isn't quite right; it rather suggests something in the nature of a railway station, that one might pass through on their way to where they really want to go. Maybe, dressed in my virtual reality anorak, I am a cyber train-spotter, but I like it here. In fact, I often don't bother to travel any further.

Drobe is a great place for RISC OS news and gossip; the modern equivalent, but a bit more glamourous than, a fish market. Drobe makes excellent use of the interactive nature of cyber-space. Not only can you read the news, you can post your comment about it. The comments are seamlessly attached to the bottom of the news item and you simply keep scrolling down to read more and more of them. Given a controversial topic, the number of comments can number thirty or more.

Inevitably, this can result in some unprofessional, and somewhat unpolished jottings but, what the hell, this is the anarchy that has become a part of the Internet's charm. True: you need a certain sense of humour to cope with it, and it is not to everyone's taste, but I don't find the editors arrogant, overtly sarcastic, childish or irresponsible as has been claimed in the past. Rather, the news, be it good bad or indifferent, is presented with intelligence, sparkle and panache (well, that's my opinion).

New stories appear every other day and, of course, the associated comments roll in over the following week or two. So, as a Web site, it has the key ingredient of content that is constantly changing; you keep coming back for more.

As an illustration of the editors' rather wicked sense of humour I must mention their April 1st news item in which a Drobe reader claimed to have just received his Omega and was so thrilled that he had taken photographs of it being lovingly lifted out of its box. The box, strangely, had come from Greece rather than China. Of course. one clicked for the full story to see a giant cardboard Greek letter Omega being unpacked from a crate.

It was, perhaps, a little mean given the hard time MicroDigital were having climbing a technical Everest to turn a dream into a reality. In my book, however, getting people to laugh about problems helps make the world a better place.

New readers to *Acorn User* probably do not realise that this magazine has been hitting the WHSmith news-stands since 1982. An ambitious project is underway at Drobe to create, with permission, an on-line archive of the older editions. I checked out the March 1985 file and, sure enough, there it was 207 scanned-in pages including the yellow paper BBC BASIC program listings for readers to type in.

Ah yes, those were the days.

Having read the news, one ought to be ready to launch into cyber-space, as the Drobe rocket-logo suggests, but various gifts keep catching the eye. An impressive collection of StrongHelp manuals, a page called Announce in which authors post details of latest versions of their, often free, software.

And, actually, the offer to search Acorn-related Web sites from within Drobe is quite tempting. I want some monitor definition files. I type in MDF and there, item nine, is what I want; Foggy's MDF page.

Drobe is a well designed, and responsive site. It's interactive news service is outstanding; functional, easy to navigate, and full of interesting and lively content. Drobe could very nearly be run as a commercial venture. I say very nearly because when I log on as a person, rather than just "guest", it has a dialogue with my computer that the firewall at my work-place really does not like.

Best of all, being non-commercial, it's advert free.

Given that the guys who run Drobe do it as a labour of love I urge you to support them. Tune in, pass comment, and be a piece of what makes RISC OS computing the better part of the whole.

drobe launchpad

Martin Hansen
martin.hansen@acornuser.com

Subscriptions



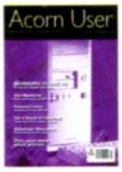
Issue 263

September 2003
WHAT THE IYONIX CAN REALLY DO
Learn the right stuff with ECDL
Getting into Digital video
and much more...



Issue 262

August 2003
THE RISC OS TAKE OVER
How the RISC PC can be used safely
Artworks 2 arrives
What Datapower can do for you



Issue 261

July 2003
Quieten your RISC PC
Web Marketing
Controlling a PC
WebJames as a server



Issue 260

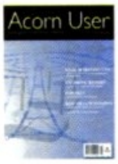
June 2003
Virtual Call Centre
Wakefield Show Review
Digital Video for RISC OS
S-Base: Final curtain

Best in blogging



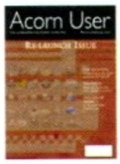
Issue 259

May 2003
Wakefield Show Preview
What's a Blog?
RISC OS Academy reviewed
MPEG3 Music player review



Issue 258

April 2003
Wireless USB from STD
SWShow report in full
Fido Net more bite than ba



Issue 257

March 2003
Re-issue issue
Using modern printers
Wireless LAN revealed
Mini PC reviewed
And even more besides



Issue 256

February 2003
Aemulor, how it does what it does
Sending spam? How to do it legally
Using RISC OS to create websites
USB how new devices are connected
S-Base: Getting in touch with reality



Issue 255

January 2002
The full Iyonix review
Business Internet Connections
USB Programming
Iyonix and the future

Please subscribe me for:

Annual subscription (13 issues)

	New	Renewal	
UK	☐ AUN0310Y	☐ AUR0310Y	£45.99
EU	☐ AEN0310Y	☐ AER0310Y	£51.99
World	☐ AWN0310Y	☐ AWR0310Y	£63.99

8-issue subscription

	New	Renewal	
UK	☐ AUN03108	☐ AUR03108	£29.99
EU	☐ AEN03108	☐ AER03108	£34.99
World	☐ AWN03108	☐ AWR03108	£40.99

4-issue subscription

	New	Renewal	
UK	☐ AUN03104	☐ AUR03104	£15.99
EU	☐ AEN03104	☐ AER03104	£17.99
World	☐ AWN03104	☐ AWR03104	£20.99

I wish to pay by:

☐ Cheque (payable to Tau Press Ltd)

☐ Postal order (payable to Tau Press Ltd)

Non-UK subscribers can still use credit cards to subscribe.

☐ Please tick here if you require a receipt

☐ Please tick if you do not wish to receive mailings from other companies

Please send me the following issues:

☐ Issue 264, Oct 2003	£4.80	£5.30	£6.90
☐ Issue 263, Sep 2003	£4.20	£4.70	£6.30
☐ Issue 262, Aug 2003	£4.20	£4.70	£6.30
☐ Issue 261, Jul 2003	£4.20	£4.70	£6.30
☐ Issue 260, Jun 2003	£4.20	£4.70	£6.30
☐ Issue 259, May 2003	£4.20	£4.70	£6.30
☐ Issue 258, Apr 2003	£4.20	£4.70	£6.30
☐ Issue 257, Mar 2003	£4.20	£4.70	£6.30
☐ Issue 256, Feb 2003	£4.20	£4.70	£6.30
☐ Issue 255, Jan 2003	£4.20	£4.70	£6.30

NAME

ADDRESS

TELEPHONE NUMBER

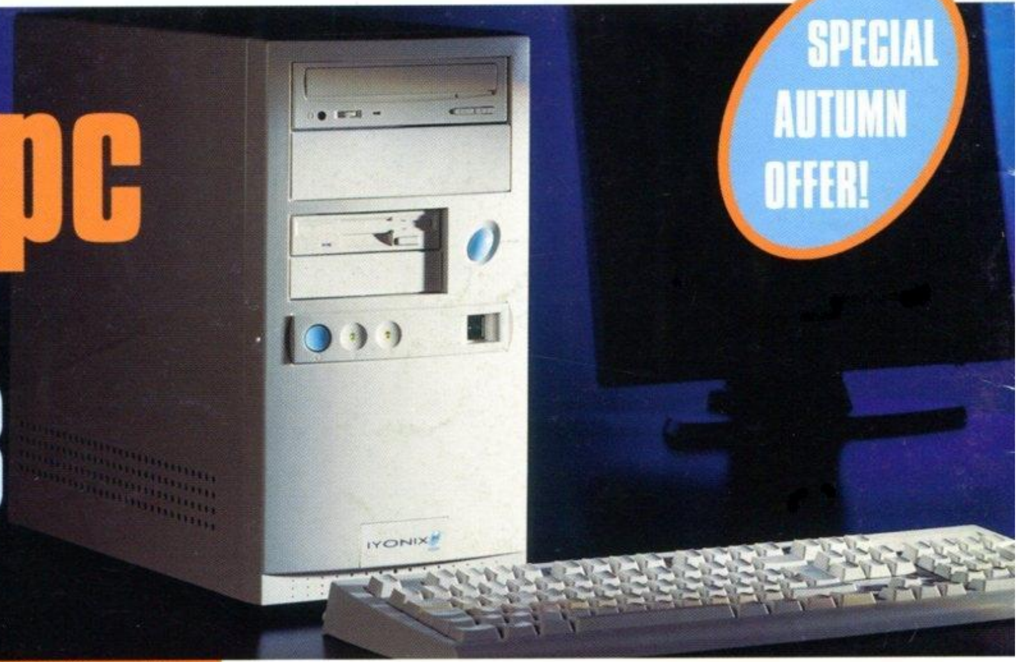
E-MAIL

Post your completed Acorn User subscription/back issues form to:
Acorn User, Tau Press, 28a Middle Hillgate, Stockport, Cheshire SK1 3AY
Have a query? E-mail ausubs@acornuser.com.


Oregano UK Ltd
The coolest way to surf
Oregano 2
The latest RISC OS web browser.
Now with even more features
Oregano UK Ltd
Download a FREE trial version from
www.castle.org.uk/oregano/
or call 01702 462385
Order now!
Oregano UK Ltd
41 Riviera Drive, Southend-on-Sea
Essex SS1 2QT
email: sales@oreganouk.net
E&OE

IYONIX pc

engineered from the inside out



IYONIX pc
WITH FREE USB HUB
(worth £49)

SPECIAL AUTUMN OFFER!

From
£1249 inc vat
delivery £20

The IYONIX pc is the latest hi-performance RISC OS computer from Castle. This autumn we are offering FREE a USB hub with every IYONIX PC bought. This 4-port hub allows extra plug-&-play USB devices to be connected to your computer. (Further hubs make it possible to connect over 100 devices simultaneously).

The IYONIX pc is available in 3 hi-spec versions:
100GB HD/512MB DDR RAM/CDRW
80GB HD/128MB DDR RAM/CDRW
40GB HD/128MB DDR RAM/CD

All models use an XScale processor and the ARM instruction set running at a breath-taking 600MHz. They have accelerated high resolution graphics of up to 2048 x 1536 pixels in 16 million colours, a hi-quality UDMA100 hard drive and 200MHz DDR memory. It all makes the IYONIX the top choice RISC OS PC.

Order now! – Special Offer ends 31st October 2003.

Tel: 01728 723200
www.iyonix.com

VISA MasterCard SWITCH DELTA

See our wide range of monitors, printers, scanners and other peripherals. Call now for details.

CASTLE

Castle Technology Ltd
Ore Trading Estate
Woodbridge Road
Framlingham
Suffolk IP13 9LL

Tel: 01728 723200
Fax: 0800 783 9638
E-mail: sales@iyonix.com
Internet: www.iyonix.com

IYONIX PC SPECIFICATIONS

MEMORY/HD/CDRW SPECIFICATIONS

Hard drive	40GB or 80GB or 100GB (model dependent)
CD/CDRW	48-speed read (24-speed re-write, 48-speed write)
Floppy drive	Standard 3.5" supporting ADFS, DOS and Atari from 360K to 1.6MB
Memory	128MB or 512MB 64-bit 200MHz DDR RAM (model dependent)

CASE – MicroATX midi tower
2 x 5.25" bays
3 x 3.5" bays (1 hidden)
4 x PCI slots
'Soft On' switch on front
'Reset' recessed on front
Dimensions(mm) 360H x 185W x 402D (must stand min 65mm from wall)

PSU
Input 115-230 volts 50-60Hz
250Watt PSU with silent mode
On/off switch

MOTHERBOARD FEATURES

Size	MicroATX
Processor	600MHz XScale 80321
Sound	CD quality AC97, 16bit soundblaster compatible
Unique ID	MAC address
PCI signalling	3.3v
Video	Resolutions of up to 2048 x 1536 pixels in 16 million colours

EXTERNAL PORTS
2 x RS232 Serial ports
10/100/1000 base twisted pair networking port
Audio in socket
Microphone socket
Audio out/Headphone socket
Video
4 x USB (2 front, 2 rear) – USB-to-parallel cable also available

INTERNAL CONNECTORS
2 x IDE connectors UDMA100 supporting 2 drives per connector (1 occupied)
32-bit EASI podule expansion socket (2 slot backplane required)
FDD connector (occupied)
DDR RAM socket (occupied)

PCI EXPANSION
2 x 64-bit; 2 x 32-bit
(1 – nVidia Geforce 2 MX400 graphics card,
1 – USB 1.1 expansion card USB,
2 – unoccupied for customer use)

OPERATING SYSTEM
RISC OS 5 held in 4MB FLASHROM
(field upgradeable)

KEYBOARD
UK 105 key, soft-touch, membrane USB keyboard

MOUSE
3 button USB mouse

SOFTWARE

Writer +	Fireworkz	Oregano 2
MessengerLITE	Dialer	CDBurn Lite

plus many other applications and demo software

Other specifications available: call 01728 723200 or visit www.iyonix.com